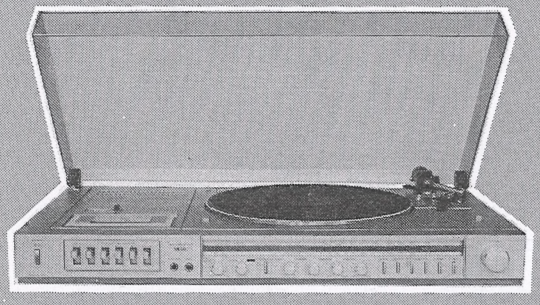
**SERVICE DATA**
**FILE NO. 140-124A**

# TOSHIBA

## STEREO MUSIC CENTRE

# SM-3180



### SPECIFICATIONS

**■ GENERAL**

| | |
|---|---|
| Power supply: | 220V 50 Hz for Europe<br>240V 50 Hz for United Kingdom & Australia |
| Power consumption: | 130W |
| Dimensions: | Set: (W)650 x (H)135 x (D)360 mm |
| Weight: | 8 kg |

**■ AMPLIFIER**

| | |
|---|---|
| Continuous power: | 2 x 17W; 1% THD at 4 ohms (both channels driven) |
| Music power: | 2 x 25W; 1% THD at 4 ohms |
| Frequency response: | 40 Hz to 20 kHz (–3 dB) |
| Signal to noise ratio: | 65 dB |
| Tone control: | Bass ±10 dB at 100 Hz<br>Treble ±10 dB at 10 kHz |
| Headphones: | Recommended impedance of headphones more than 8 ohms. |

**■ TUNER**

| | |
|---|---|
| Frequency range: | FM: 88 – 108 MHz<br>LW: 145 – 360 kHz<br>MW: 525 – 1605 kHz |

**■ FM BAND**

| | |
|---|---|
| Aerial: | External aerial, 300 ohms |
| Usable sensitivity: | 9 μV (40 kHz deviation MONO) |
| Signal to noise ratio: | 60 dB (40 kHz deviation MONO) |
| Distortion: (40 kHz deviation) | 0.4% (MONO)<br>0.6% (STEREO) |
| Separation: | 25 dB (at 1 kHz) |

**■ AM BAND**

| | |
|---|---|
| Aerial: | Ferrite core aerial (built-in) an external aerial |
| Usable sensitivity: | LW: 600 μV<br>MW: 400 μV |

**■ RECORD PLAYER**

| | |
|---|---|
| Drive system: | Belt drive |
| Motor: | DC servo motor |
| Wow and flutter: | 0.15% (DIN) |
| Signal to noise ratio: | 55 dB |
| Cartridge: | C-290M MM type |
| Stylus: | N-290D |
| Tracking force: | 2 g |
| Turntable platter: | 302 mm aluminum diecast |

**■ CASSETTE RECORDER**

| | |
|---|---|
| Usable tape: | Compact cassette |
| Tape speed: | 4.75 cm/s |
| Recording system: | AC bias |
| Erasing system: | AC erase |
| Track system: | 4-track/2-channel stereophonic |
| Signal to noise ratio: | 58 dB (Metal tape peak level WTD) |
| Frequency response: | 40 Hz to 15 kHz (±3 dB) Metal tape |

Specifications are subject to change without notice.

TE, TU, AY

990

# 1. BLOCK DIAGRAM

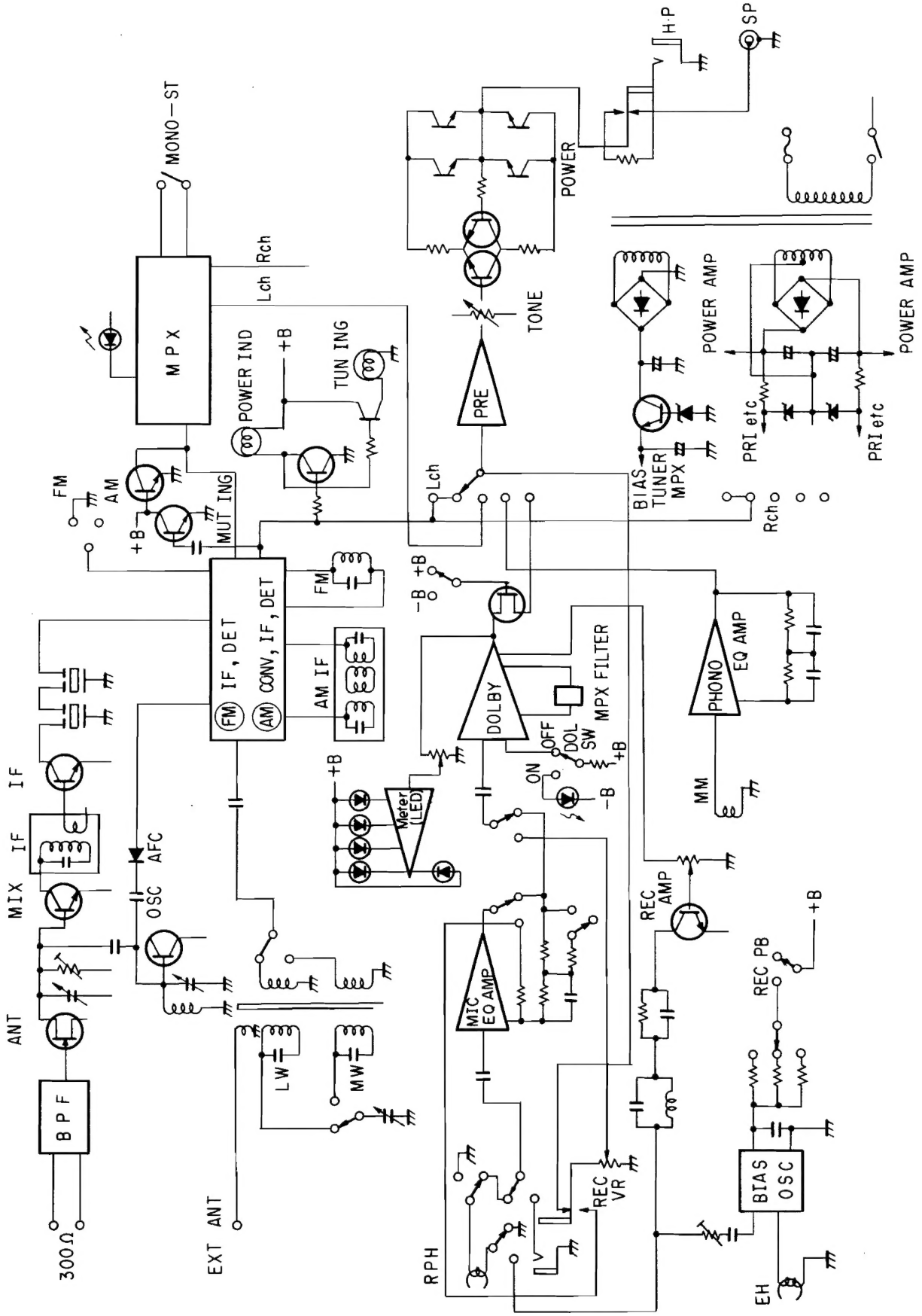



Figure 1.

# 2. OPERATING CONTROLS

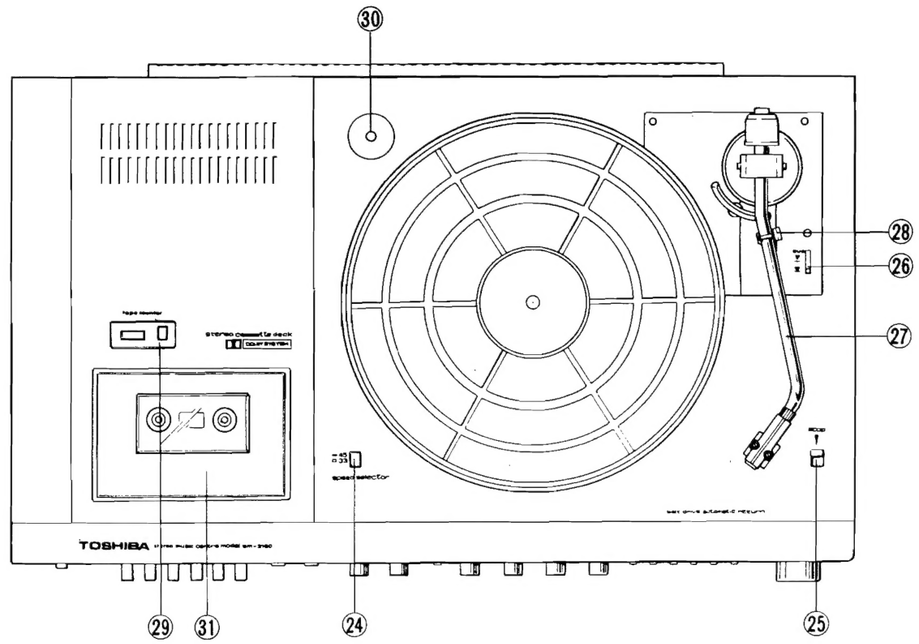



Figure 2.

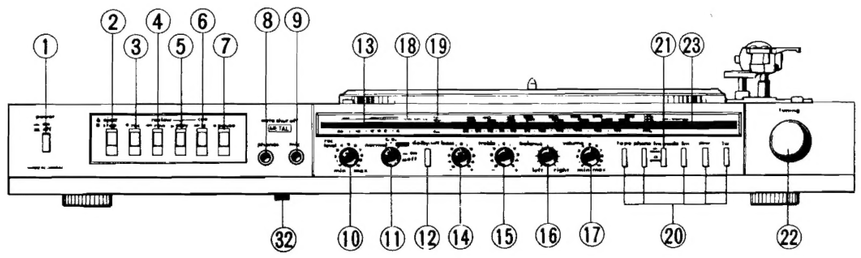



Figure 3.

① **POWER SWITCH [power]**
Depress this switch once to turn the power ON. Depress once more to turn the power OFF.

② **STOP/EJECT LEVER [ ■ ⏏ stop/eject]**
During PLAY, FAST FORWARD, RECORD, or REWIND, depress this lever once to stop tape travel. Depress once more to open the lid and remove the cassette.

③ **RECORD LEVER [● rec]**
Depress this lever to record.

④ **REWIND LEVER [ ◀◀ rew]**
Depress this lever to rewind the tape rapidly. (Tape may also be rewound while the PLAY LEVER ⑤ is depressed.)

⑤ **PLAY LEVER [ ▶ play]**
Press this lever for tape playback.

⑥ **FAST FORWARD LEVER [ ▶▶ ff]**
Depress this lever to wind the tape rapidly forward. (Tape may also be advanced while the PLAY LEVER ⑤ is depressed.)

⑦ **PAUSE LEVER [ ▮▮ pause]**
During RECORD or PLAY, depressing this lever temporarily stops tape movement. Depress the lever once more to resume RECORD or PLAY.

⑧ **HEADPHONE JACK [phones]**
Insert a headphone plug into this jack for private listening. The sound from the speakers is automatically cut off.

⑨ **MIC JACK [mic]**
A microphone may be used to make tape recordings. Use a microphone with a 6.3 mm plug. (Recordings from the microphone are made on both channels.)

⑩ **RECORD LEVEL CONTROL**
This control is used to adjust the recorded signal level.

⑪ **TAPE SELECTOR CONTROL [rec level]**
Set this control according to the type of tape being used. When set to the METAL position, the METAL INDICATOR ⑱ is illuminated.

⑫ **DOLBY SELECTOR SWITCH [Dolby-NR]**
Depress this switch to the IN ( ▬ ) position to make Dolby recordings or to play a Dolby recorded tape. For all other tapes, leave the switch in the OUT ( ▮ ) position. In the IN position, the indicator ⑲ is illuminated. Dolby NR is a noise reduction system that can significantly reduce annoying tape hiss when used during recording and playback.

* Noise reduction system manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

⑬ **LEVEL INDICATOR**
This provides a visual display of the sound level during PLAY or RECORD.

⑭ **BASS CONTROL [bass]**
Turn this control to the right to accentuate low frequencies, and to the left to soften them.

⑮ **TREBLE CONTROL [treble]**
Turn this control to the right to accentuate high frequencies, and to the left to soften them.

⑯ **BALANCE CONTROL [balance]**
Turn this control to the right to increase the volume of sound from the right speaker, and decrease that from the left. Turn to the left for the opposite effect.

⑰ **VOLUME CONTROL [volume]**
Turn to the right to increase the sound level; turn to the left to decrease the sound level.

⑱ **METAL INDICATOR**

⑲ **DOLBY INDICATOR**

⑳ **FUNCTION SWITCHES**
These switches are used to select the desired program source.

| | |
|---|---|
| TAPE: | Cassette tape mode. |
| PHONO: | Record player mode. |
| LW: | LW radio broadcast mode. |
| MW: | MW radio broadcast mode. |
| FM: | FM radio broadcast mode. |

㉑ **MONO/STEREO MODE SWITCH**
This switch is used to select monaural or stereo FM reception. ( ▮ ) STEREO: For stereo and mono reception. The muting circuit functions to reduce noise.
( ▬ ) MONO: Even stereo broadcasts are reproduced in mono. The muting circuit does not function.

Note: When a signal received from a station broadcasting in stereo is weak, the MONO mode will automatically be selected.

㉒ **TUNING CONTROL [tuning]**
This control is used to select the desired station frequency for radio reception.

㉓ **STEREO INDICATOR**
(Will not light for weak signals)

㉔ **33/45 SELECTOR**
This switch is used to select the proper turntable speed for the record being played. ( ▮ ) 33 1/3 rpm ( ▬ ) 45 rpm

㉕ **STOP LEVER**
In the record player mode, when it is desired to stop a record before it is completed, drawing this lever forward will cause the arm to return to the rest and automatically stop the platter.

㉖ **CUEING LEVER**
This lever serves to gently lower the tonearm and to raise it.

㉗ **TONEARM**

㉘ **ARM REST CLAMP**

㉙ **COUNTER INDICATOR/RESET BUTTON**
Press this button to reset the tape counter to "000"

㉚ **45 ADAPTER**
This is the EP record adapter. Remove it from the bag of accessories and place it in the left rear corner of the player cabinet.

㉛ **CASSETTE LID**

㉜ **BEAT-CANCEL SWITCH**
Use this switch to eliminate beat interference signal while recording from a LW or MW source.

# 3. SETTING UP PROCEDURE/ CONNECTIONS

## ■ Assembly

Do not plug the unit into a wall socket until all connections have been made.
Remove the platter, rubber mat and accessory bag from the shipping crate. Remove the 45 adapter from the bag.

① Referring to Fig. 4, place the turntable platter and adaptor on the player board.

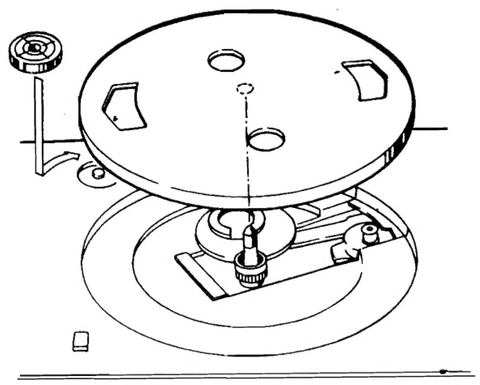


Figure 4.

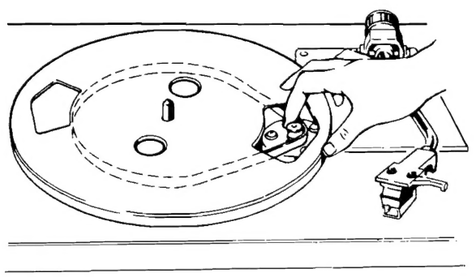


Figure 5.

② Referring to Fig. 5, place the belt fitted to the inside of the platter over the motor pulley. (Be careful not to get grease or oil on the belt.) After the belt has been fitted to the turntable, bring the Manual stop lever forward and rotate the turntable in a clockwise direction 9 or 10 times. (As the internal mechanism is occasionally switched to the operating position during shipment, do not neglect to do this.)

③ Attach the dust cover and set the rubber mat in place referring to Fig. 6.

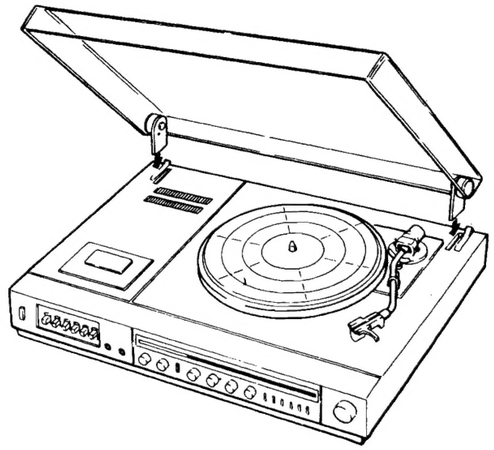
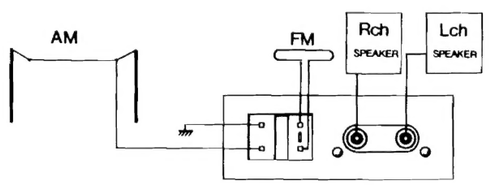


Figure 6.

## ■ Connections

The terminals to the speakers, AM and FM aerials are located on the right hand side and underneath the unit as shown in the illustration. The unit will have to be tilted up in order to connect the terminals. After the connections are made, route them to the rear of the unit referring to the portion of the drawing marked by the arrow ➡




The FM and AM antenna wires (Behind of the Set) are already connected into the terminals.

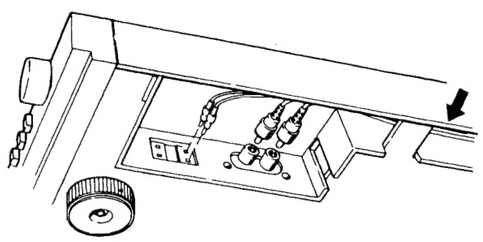


Figure 7.



# 4. DISASSEMBLY INSTRUCTIONS

## BOTTOM PLATE REMOVAL

1. Remove 11 Screws ①, ② from the Bottom plate.
2. Separate the Bottom plate from the Cabinet.

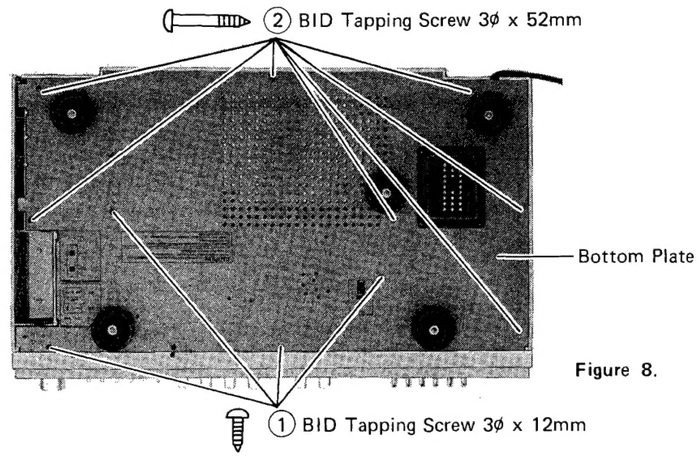



Figure 8.

## FRONT PANEL REMOVAL

1. Remove the Bottom plate.
2. Remove the 7 Knobs ③.

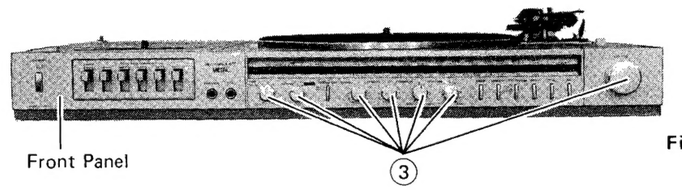



Figure 9.

3. Remove 7 Screws ④, ⑤, ⑥.

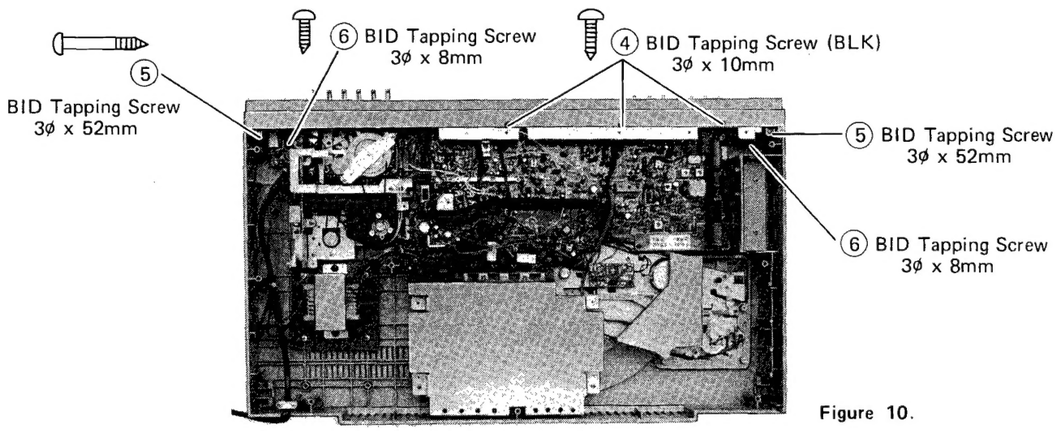



Figure 10.

4. Remove 4 Screws (7).
5. Separate the Front Panel from the Cabinet.

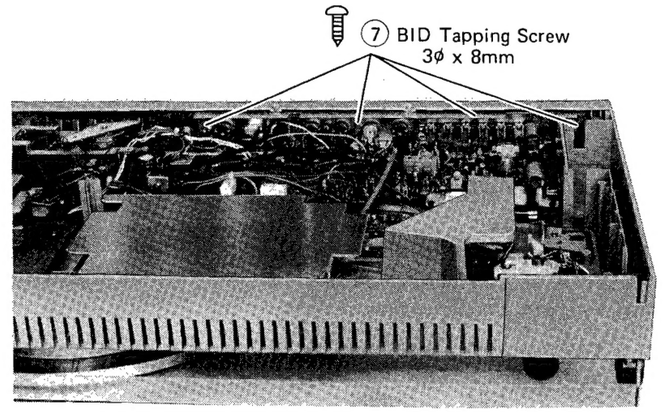



Figure 11.

**MECHANISM ASSEMBLY REMOVAL**

1. Remove the bottom plate and front panel.
2. Push the Eject button to keep the cassette compartment lid open.
3. Remove 5 Screws (8), (9), and detach the Mechanism Ass'y.

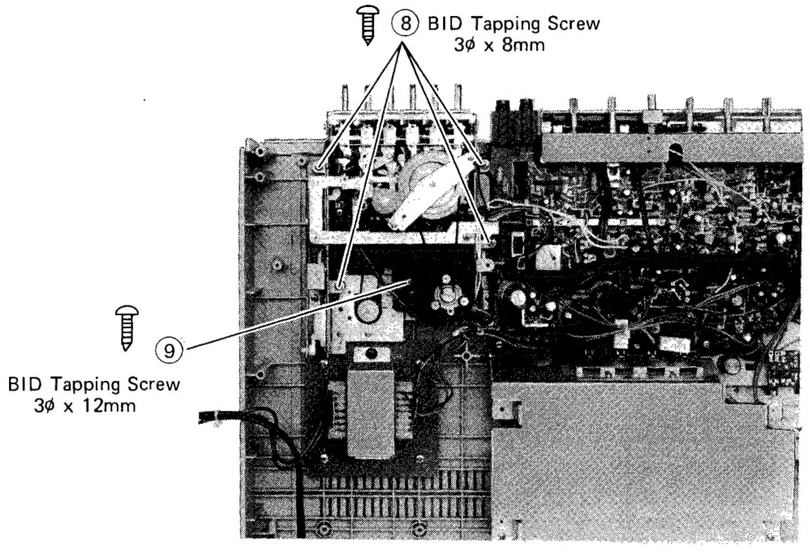



Figure 12.



## 5. DIAL CORD RESTRINGING

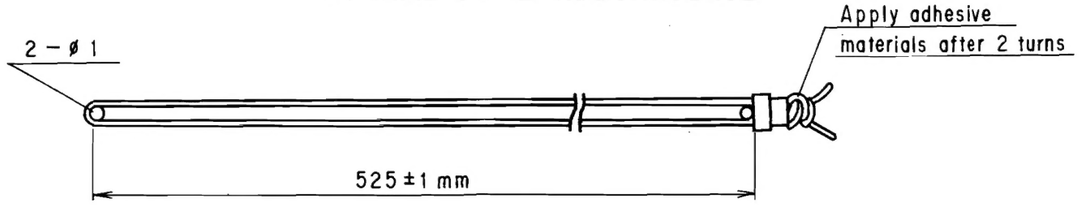



Figure 13.

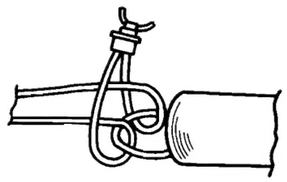


Figure 14.

1. Set the variable capacitor to the maximum capacitance (fully counterclockwise position).
2. Mount a spring to the drum and wind the dial cord in the numerical sequence as shown in the direction of arrows.

SETTING UP DRUM SPRING WITH DIAL CORD

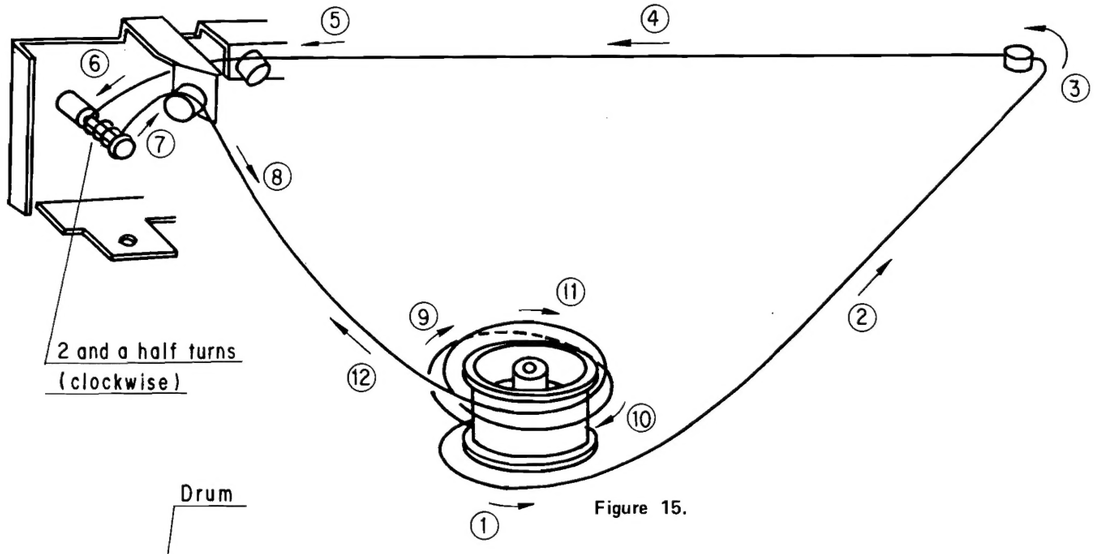



Figure 15.

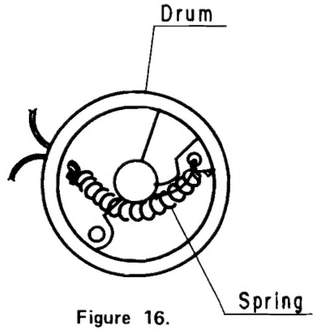



Figure 16.

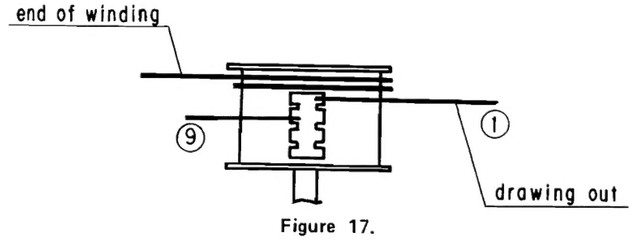



Figure 17.

**Dial pointer mounting position.**

Mount the dial pointer to the cord in this position where the variable capacitor have been wound up fully clockwise.

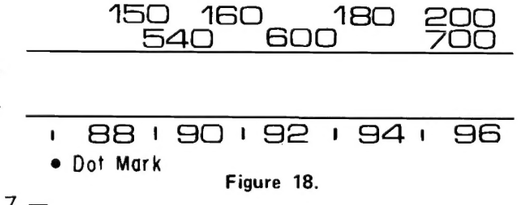



Figure 18.

# 6. ADJUSTMENTS

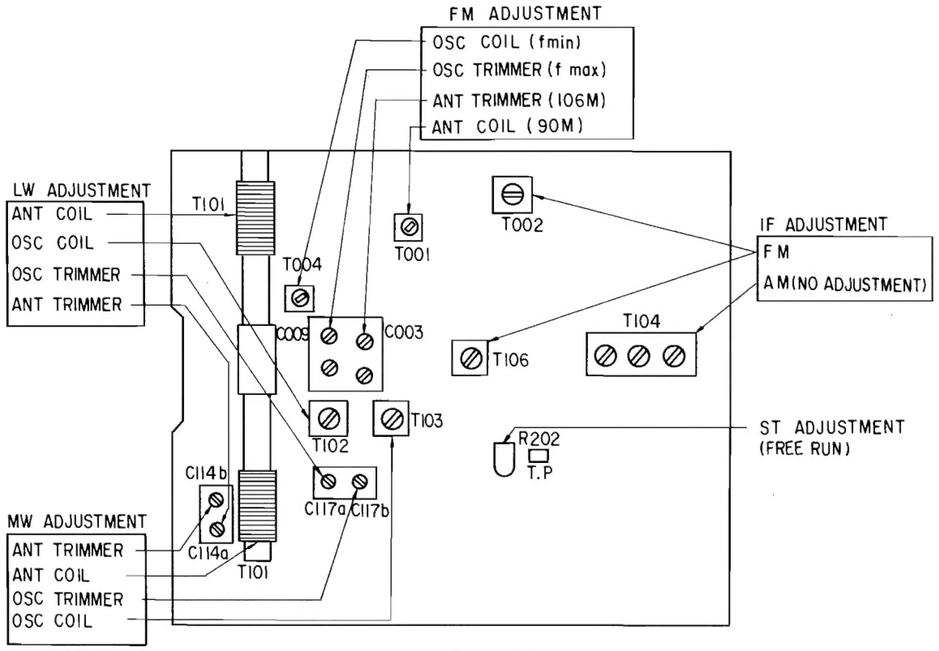



Figure 19.

**MEASUREMENT CONDITIONS**

| | Band Switch S101 | Mode. Switch S101 | Other Switch | Vol. | Balance | Treble | Bass | Others V.R. | | Anten-na | Load | Output | Voltage | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IF | FM ↓ MW | Mono. | Free | Free | Free | Free | Free | Free | | – | – | Calibra-tion | DC12V | |
| LW | LW | | | | | | | | | IEEE Loop | – | | | |
| MW | MW | | | | | | | | | | – | | | |
| FM | FM | | | | | | | | | 300Ω Dummy | – | | | |
| Stereo | FM | Mono. ↓ Stereo | | SP out 1.6V | Middle Point | Middle Point | Middle Point | | | | | 1.6V | 220V 240V (Trans-former) | Modulation 30% (22.5K) Pilot 8% (6K) 400 Hz |
| Ability | LW MW FM | Mono. | | | | | | | | IEEE 300Ω Dummy | | | | FM Modulation 30% 400 Hz AM Modulation 30% 400 Hz |

**Caution:**

(1) Under no load the output voltage of stereo is 1.6V in the performance process (under load: 1.41V. 500 mW). In the absence of heat discharging plates on Power Tr, measurement should be carried out under no load for preventing breakage.

(2) Adjustment shall be carried out in the sequence of LW--MW. (Adjustment carried out in the reverse sequence leads to deviation.)



**IF-ADJUSTMENT**

1. Set all the trimmer coils at mid-point.
2. The variable condenser position is at Fmin.
3. Calibrate the IF sweep.
   Vertical gain 2 cm/0.1 VRP
   Input ATT 74 dB
   Taking sweep variation into account, input shall be calibrated so as to assure the stabilized waveform from low to high.

**4) FM-IF ADJUSTMENT**

① Turn the band switch to FM. Position the variable capacitor near Fmin, free from external signals.

② Detune T106 (black). (Turn the core to the fully counter-clockwise.)

③ Maximize T002 (violet). (Depending upon the ceramic filter, the maximization should be attained in symmetry. Some deviation (10.7 MHz) is tolerable.)

④ S-curve is attained by T106 (black). (The IF sweep marker can be ignored. The curve must be vertically symmetric. The following waveform represents a defective example.

Vertically asymmetric Stepped



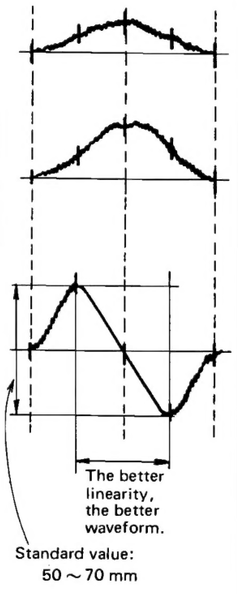



Figure 20.

**5) Verification of AM-IF waveform:**

① Turn the band switch to MW. Position the variable capacitor at Fmin, free from external signals.

② Verify that the IF waveform represents 460 kHz in the central frequency and height as shown in the sketch.

Figure 21.

Note: The central frequency should stay within the range of 458 kHz – 462 kHz.

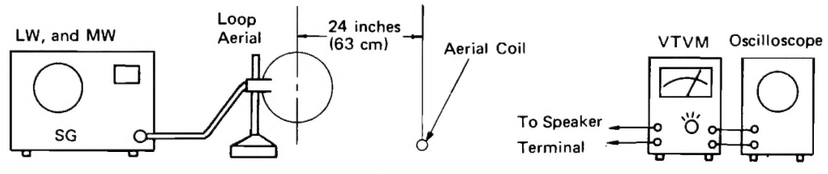



Figure 22.

## ■ LW ADJUSTMENT

1. Set Function switch to LW.
2. Set signal generator frequency as listed in TABLE 1 LW ADJUSTMENT CHART.
3. Proceed as outlined in the TABLE 1 LW ADJUSTMENT CHART.

**TABLE 1 LW ADJUSTMENT CHART (See Figure 22)**

| Step | Signal Generator Connection | Signal Generator Frequency | Radio Dial Setting | Connection (See Fig. 22) | Adjustment | Remarks |
|---|---|---|---|---|---|---|
| 1 | Test loop | 180 kHz | Tune to signal | VTVM across Speaker terminal | T102 T101 | Adjust for Maximum |
| 2 | Test loop | 300 kHz | Tune to signal | VTVM across Speaker terminal | C117a C114a | Adjust for Maximum |
| 3 | Repeat steps 1 and 2 until no further improvement is noticed. | | | | | |
| 4 | Check to see if frequency covers 150 kHz or more at *f*min. and 360 kHz at *f*max. | | | | | |

Dial plate adjusting position

180 ----- Adjust the pointer for center between 1 and 0.

300 ----- Adjust the pointer for center between 3 and 0.

Pointer
(3|00)

## ■ MW ADJUSTMENT

1. Set Function switch to MW.
2. Set signal generator frequency as listed in TABLE 2 MW ADJUSTMENT CHART.
3. Proceed as outlined in the TABLE 2 MW ADJUSTMENT CHART.

**TABLE 2 MW ADJUSTMENT CHART (See Figure 22.)**

| Step | Signal Generator Connection | Signal Generator Frequency | Radio Dial Setting | Connection (See Fig. 22.) | Adjustment | Remarks |
|---|---|---|---|---|---|---|
| 1 | Test loop | 510 kHz | Tuning gang fully counter-clockwise | VTVM across Speaker terminal | T103 | Adjust for Maximum |
| 2 | Test loop | 1650 kHz | Tuning gang fully clockwise | VTVM across Speaker terminal | C117b | Adjust for Maximum |
| 3 | Repeat steps 1 and 2 until no further improvement is noticed. | | | | | |
| 4 | Test loop | 600 kHz | Tune to signal | VTVM across Speaker terminal | T101 | Adjust for Maximum |
| 5 | Test loop | 1400 kHz | Tune to signal | VTVM across Speaker termianl | C114b | Adjust for Maximum |
| 6 | Repeat steps 4 and 5 until no further improvement is noticed. | | | | | |



## FM ADJUSTMENT

1. Set Function switch to FM.
2. Set signal generator frequency as listed in TABLE 3 FM ADJUSTMENT CHART.
3. Proceed as outlined in the TABLE 3 FM ADJUSTMENT CHART.

**TABLE 3 FM ADJUSTMENT CHART (See Figure 23.)**

| Step | Adjusting Circuit | Connection | | SG Frequency | Position of Tuning Dial | Adjustment | Remarks |
|---|---|---|---|---|---|---|---|
| | | Input | Output | | | | |
| 2 | OSC (Frequency Coverage) | Connect FM Signal generator to FM antenna terminal. Connect the modulator to Signal generator. | Connect VTVM and oscilloscope to FM output as shown in Figure 23. | 87.5 MHz | Tune to 87.5 MHz Signal | T004 | Maximum |
| 3 | | | | 109 MHz | Tune to 109 MHz Signal | C003 | |
| Repeat steps 2 and 3. | | | | | | | |
| 4 | RF (Tracking) | Connect FM Signal generator to FM antenna terminal. Connect the modulator to Signal generator. | Connect VTVM and oscilloscope to FM output as shown in Figure 23. | 90 MHz | Tune to 90 MHz Signal | T001 | Maximum |
| 5 | | | | 106 MHz | Tune to 106 MHz Signal | C003 | |
| Repeat steps 4 and 5. | | | | | | | |

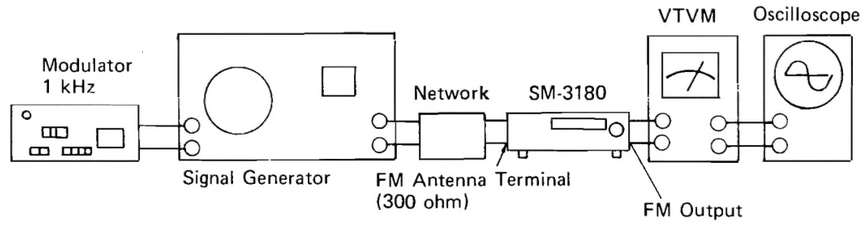



**Figure 23.**

**CAUTION:** When realizing the FM Receiving Frequency, the lower side of the frequency range must not be below 87.5 MHz in order to comply with FTZ regulations in West Germany.

**FM MPX ADJUSTMENT:**

Adjustment of free-run frequency

1. Turn the function switch to FM.
2. Turn the mode switch to MONO.
3. Connect the frequency counter to the test point (T.P.).
4. Apply 30% modulated (22.5 kHz) 60 dB 98 MHz from FM signal generator to ANT-IN. (There is no indicator.) After 98 MHz is received, adjust R202 so that the free-run frequency represents 76 kHz ±0.15 with non-modulation.

**IDLE CURRENT ADJUSTMENT:**

1. Connect VTVM to terminal R613 and terminal R614.
2. Adjust terminal R615 and 616 so that VTVM indicates 3 ~ 5 mV.

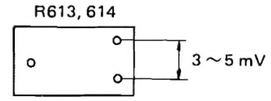



Figure 24.

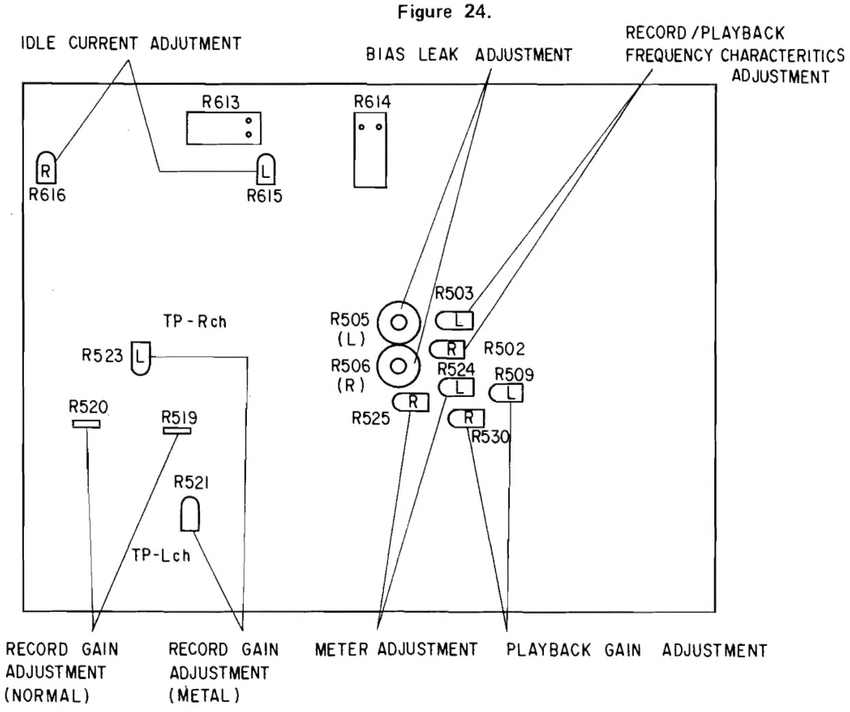



Figure 25.

Measuring State

1. Input: 0 dB = 1V
2. Mic input impedance: 600Ω
3. SP output load: Open
4. Test point load: Open
5. Balance VR: Mid point
6. Tone (BASS, TRE.) VR: Mid point
7. TAPE switch: ON (push)
8. Dolby switch: OUT
9. Beat switch: Front (Front panel side)



| No. | Item | Tape Used | Reference Value | Alignment Point | Output Point (Test Point) | Input Freq. ATT | Volume Position | | Tape Change Switch | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Rec. VR | Vol. VR | | |
| 1 | Head azimuth adjustment | MTT -114 | Both R & L to max. | Head adjusting screw | Speaker output terminal | —— | —— | 1.4V (+5 dB) | Normal | Adjust for max. with both L & R. Lock with screw after adjustment. |
| 2 | Tape speed adjustment | MTT -111 | 3000 Hz ± 60 Hz | Semi-fixed Variable Resistor in the Motor. | Speaker output terminal | —— | —— | About 1.4V | Normal | |
| 3 | Play back gain adjustment | MTT -150 | 580mV ± 10mV | R509 R530 | Dolby out (TP – L) (TP – R) | —— | —— | 1.4V (+5 dB) | Normal | |
| | Meter (LED) | MTT -150 | Dolby mark point | R524 R525 | VU meter | —— | —— | 1.4V (+5 dB) | Normal | |
| 4 | Bias lead adjustment | Blank Tape | Minimum | L505 L506 | Bias out | —— | MIN | —— | Metal | Set the mechanism to REC and adjust L505, L506 so that the both L and R is minimum . Make cirtain that Metal indication LED lights when setting to metal. |
| 5 | Record/ playback frequency adjustment (Metal) | AC -711 | 1 kHz 10 kHz: –4 dB | R503 R502 | Speaker output terminal | Mic input 1 kHz → 10 kHz –80 dB | MAX | 1.4V (+5 dB) | Metal | Record and playback –80 dB at 1 kHz and 10 kHz and adjust R503, R502 so that 10 kHz is –4 dB comparing to 1 kHz. |
| 6 | Record gain adjustment (Metal) | AC -711 | 420mV ± 10mV | R521 R523 | Dolby out (TP – L) (TP – R) | Mic input 1 kHz –60 dB | Output 420mV | —— | Metal | Adjust recording VR for 420mV output on recording. Then, playback it and adjust R521, R523 so that output is 420mV. |
| 7 | Record gain adjustment (Normal) | AC -211 | 420mV ± 10mV | R519 R520 | Dolby out (TP – L) (TP – R) | Mic input 1 kHz –60 dB | Output 420mV | | Normal | Adjust recording VR for 420mV output on recording. Then, playback it and adjust R519, R520 so that output is 420mV. |

## 7–1. P.C. BOARD PARTS LOCATIONS (TOP VIEW)

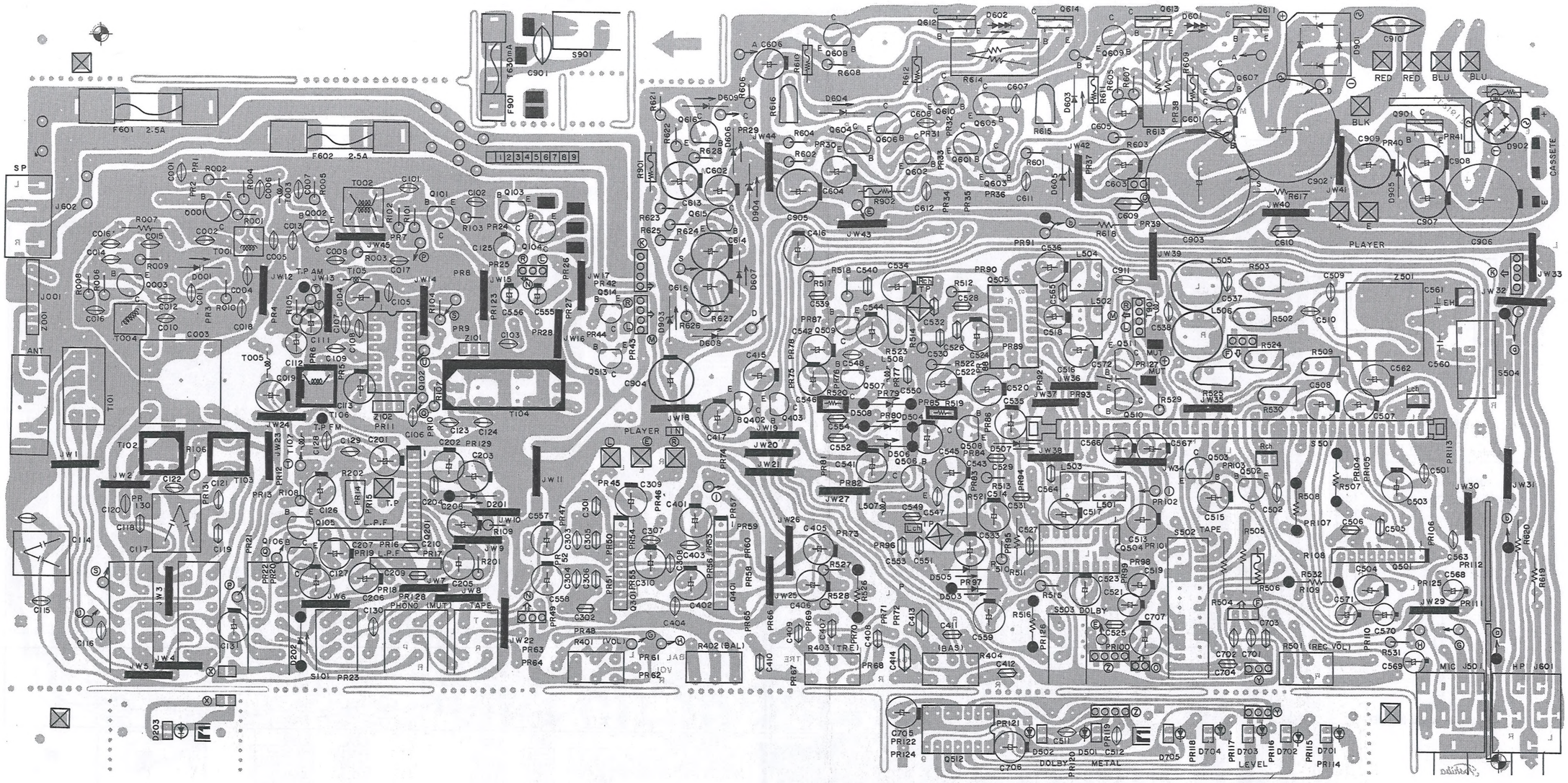
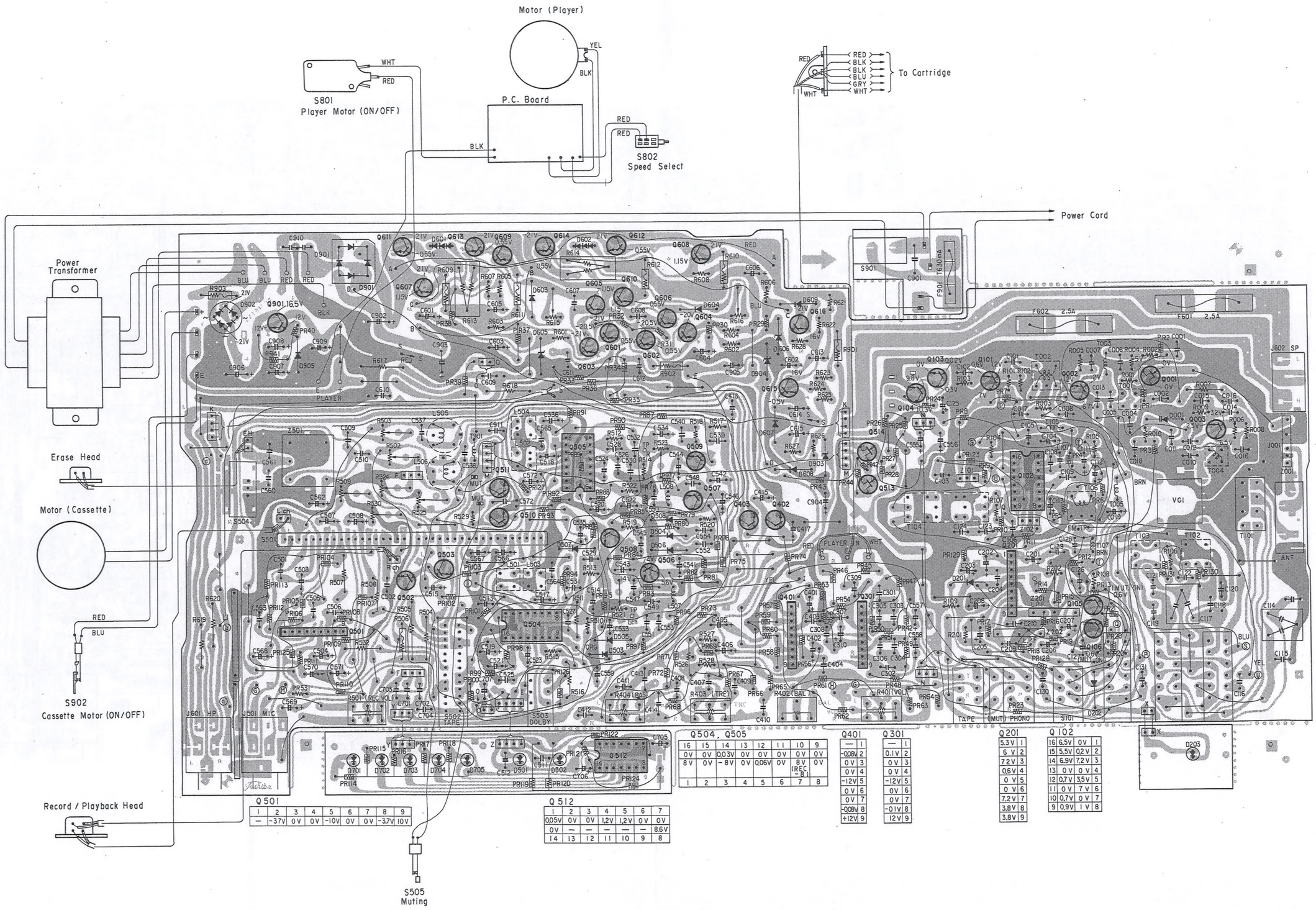
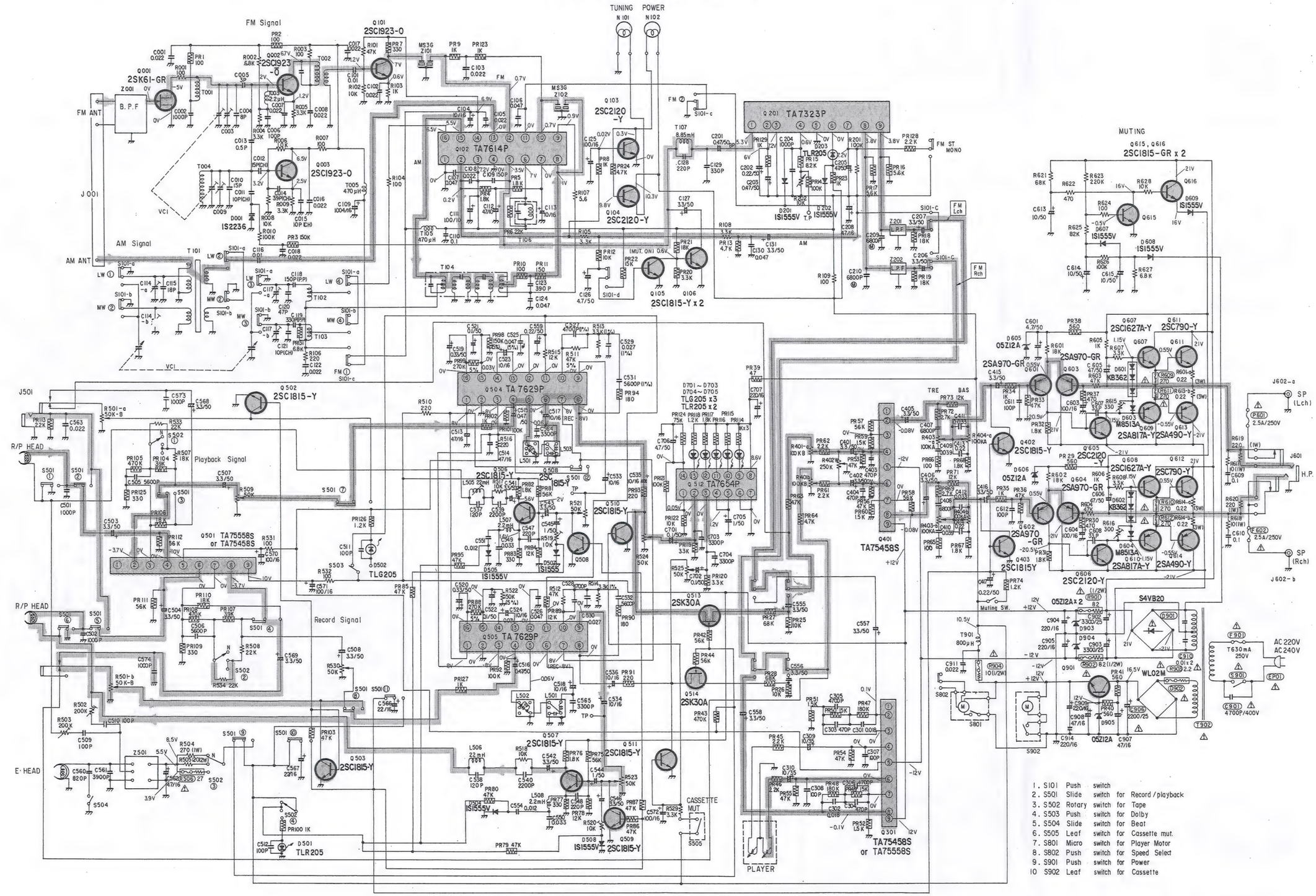


Figure 26.

## 7-2. P.C. BOARD PARTS LOCATIONS (BOTTOM VIEW)



# 8. SCHEMATIC DIAGRAM

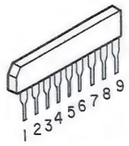



1. S101 Push switch
2. S501 Slide switch for Record / playback
3. S502 Rotary switch for Tape
4. S503 Push switch for Dolby
5. S504 Slide switch for Beat
6. S505 Leaf switch for Cassette mut.
7. S801 Micro switch for Player Motor
8. S802 Push switch for Speed Select
9. S901 Push switch for Power
10. S902 Leaf switch for Cassette

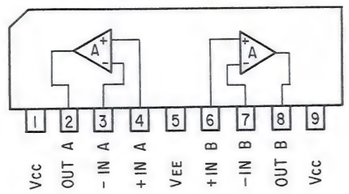
Figure 28.

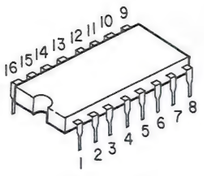
**CAUTION :** The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

## 9. IC BLOCK DIAGRAM

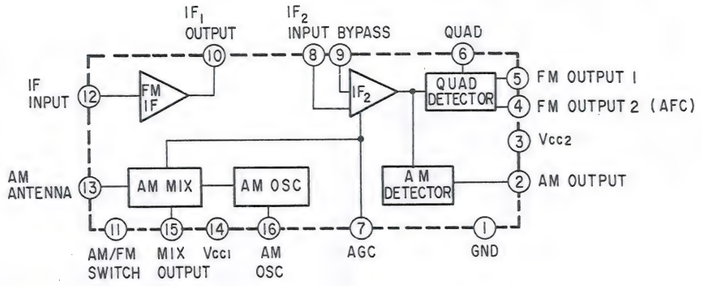


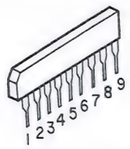

TA75458S



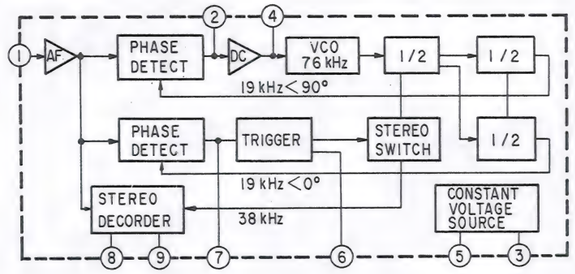



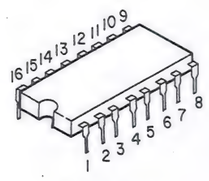

TA7614P



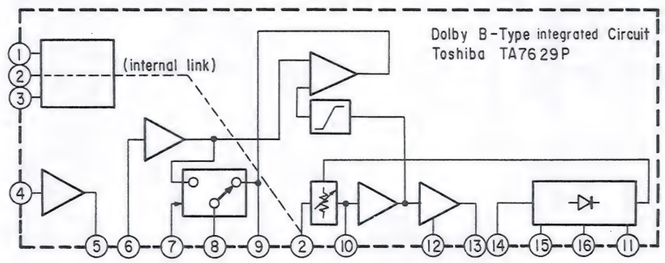



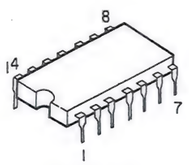

TA7323P




TA7629P




TA7654P

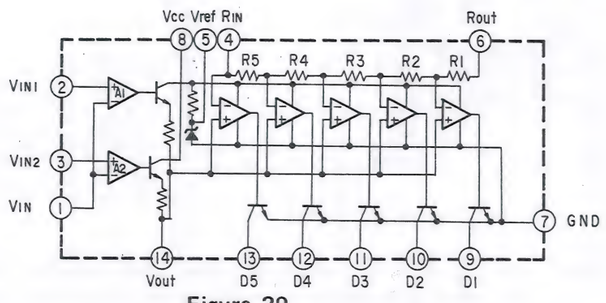



Figure 29.



## 10–1. CASSETTE MECHANISM EXPLODED VIEW (UPPER)

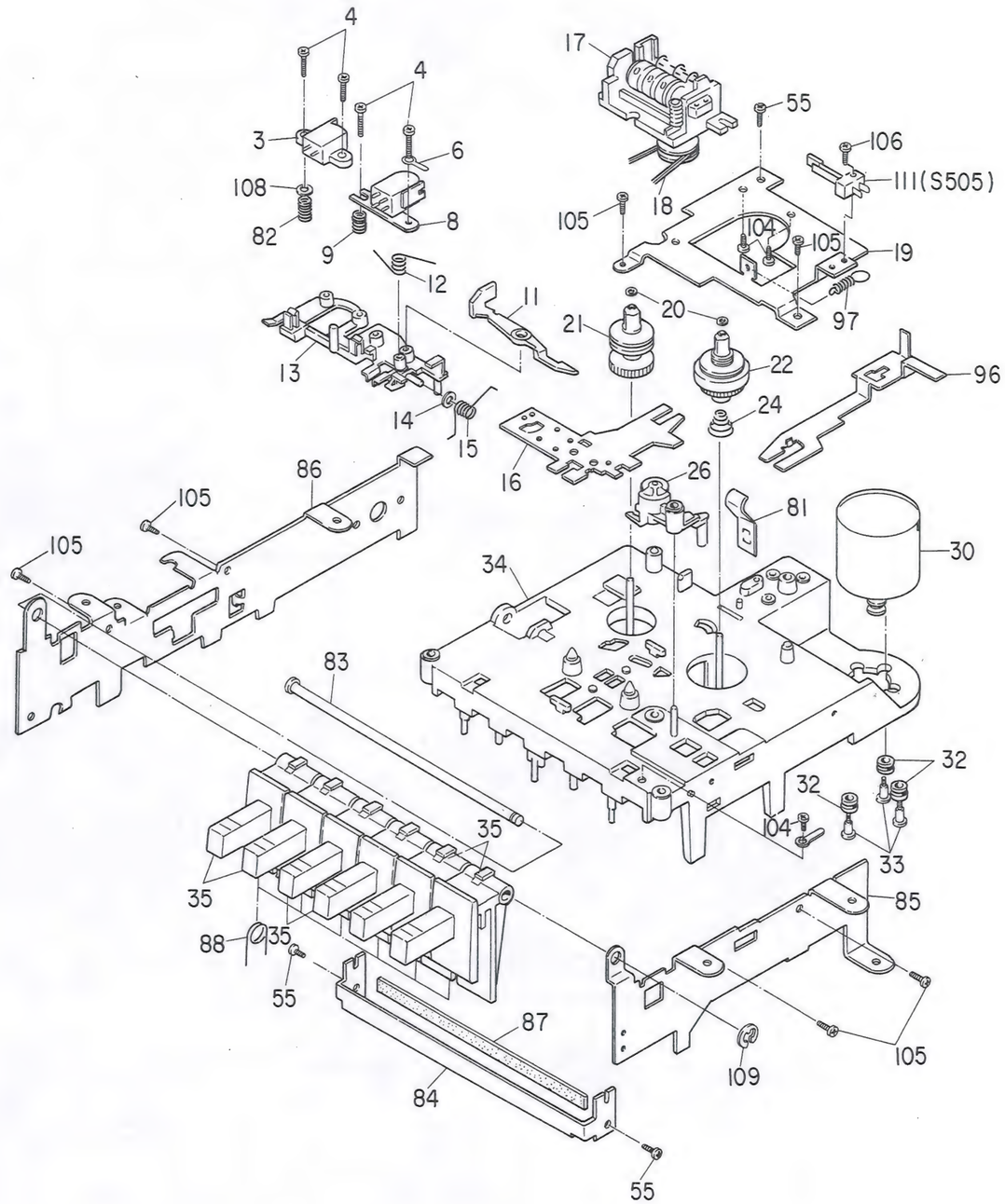



Figure 30.

NOTE: Excluded parts in the Parts List are not available as replacement parts.

## 10-2. CASSETTE MECHANISM EXPLODED VIEW (LOWER)

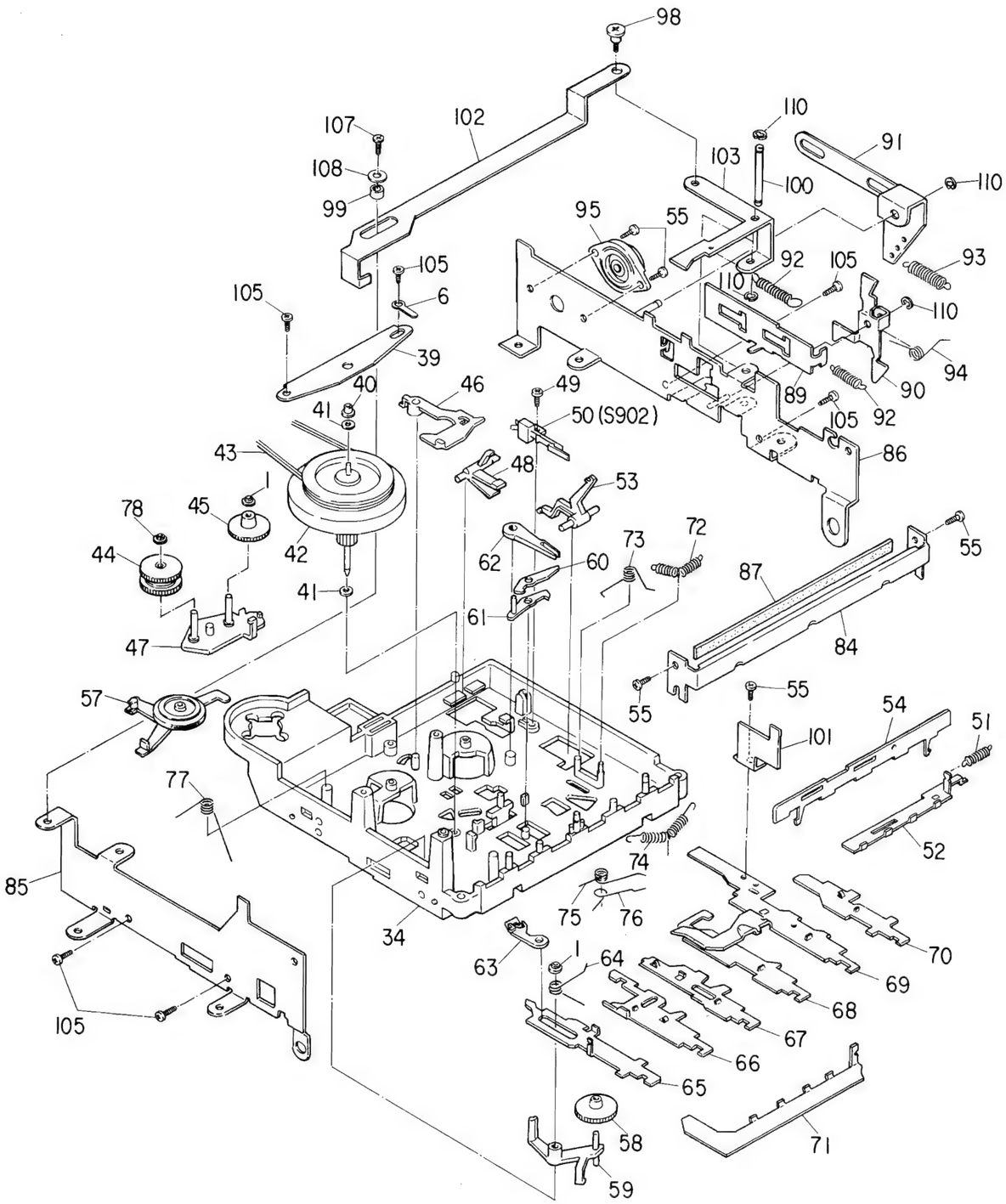



**Figure 31.**

NOTE: Excluded parts in the Parts List are not available as replacement parts.



## 13-1. PARTS LIST

| Symbol No. | Part No. | Description |
|---|---|---|
| | | **MECHANICAL PARTS (CASSETTE SECTION)** |
| 1 | 25783195 | Bushing |
| 3 | 22218227 | Head, Erase |
| 4 | 22707322 | Screw (BID), 2ø x 10mm |
| 8 | 22217362 | Head, Record/Playback |
| 9 | 25772585 | Spring, Azimuth |
| 11 | 25782249 | Lever, Detect |
| 12 | 25773366 | Spring, Pressure Roller |
| 13 | 25783225 | Mount, Head |
| 14 | 25764550 | Washer, 3.6ø |
| 15 | 25773365 | Spring, Head Slider |
| 16 | 25741825 | Slider, Head |
| 17 | 25873233 | Tape Counter |
| 18 | 25755272 | Belt, Counter |
| 20 | 25764549 | Washer, 1.7ø |
| 21 | 25754338 | Reel Plate, Supply |
| 22 | 25712348 | Reel Plate, Take-up |
| 24 | 25772414 | Spring |
| 26 | 25717392 | Roller Ass'y, Pressure |
| 30 | 25791088 | Motor Ass'y |
| 32 | 25761327 | Cushion, Motor |
| 33 | 22707296 | Spacer |
| 35 | 25837516 | Knob |
| 40 | 25725340 | Holder, Flywheel |
| 41 | 25764398 | Washer, Flywheel |
| 42 | 25717391 | Flywheel Ass'y |
| 43 | 25755382 | Belt, Drive |
| 44 | 25719491 | Gear Ass'y |
| 45 | 25756179 | Gear, High Speed |
| 46 | 25782252 | Lever, FF |
| 47 | 25782251 | Lever, Rewind |
| 48 | 25782248 | Lever, Record Lock |
| 49 | 22707326 | Screw (BID), 3ø x 8mm, Tapping |
| 51 | 25771617 | Spring, Switch Slider |
| 53 | 25782374 | Lever, Cassette-up |
| 54 | 25732340 | Plate, Stop |
| 55 | 22707350 | Screw (BID), 2.6ø x 5mm |
| 57 | 25719495 | Idler Ass'y |
| 58 | 25756247 | Gear, ASO |
| 59 | 25782247 | Lever, ASO |
| 60 | 25782250 | Lever, Review |
| 61 | 25782294 | Lever, Cue |
| 62 | 25782275 | Lever, Record Stop |
| 63 | 25782173 | Lever, Pause Lock |
| 64 | 25773367 | Spring, ASO Lever |
| 65 | 25741599 | Operation Plate, Pause |
| 66 | 25741826 | Operation Plate, FF |
| 67 | 25741841 | Operation Plate, Play |
| 68 | 25741836 | Operation Plate, Rewind |
| 69 | 25741546 | Operation Plate, Record |
| 70 | 25741759 | Operation Plate, Stop |
| 71 | 25741783 | Slider, Lock |
| 72 | 25771955 | Spring, Lock Slider |
| 73 | 25773369 | Spring, Operation Plate |
| 74 | 25771956 | Spring, Operation Plate |
| 75 | 25773484 | Spring, Operation Plate |
| 76 | 25773405 | Spring |
| 77 | 25773370 | Spring, Idler |
| 78 | 25783226 | Bushing |
| 82 | 25772579 | Spring, Erase Head |
| 84 | 25732348 | Stopper, Button |
| 87 | 25761342 | Cushion |
| 88 | 25773420 | Spring, Push Lever |
| 92 | 25771603 | Spring |
| 93 | 25776245 | Spring |
| 94 | 25773522 | Spring, Lock Lever |
| 95 | 25791179 | Damper Ass'y |
| 97 | 25776247 | Spring |
| 98 | 22701472 | Screw (FLT), 2.6ø x 13mm |
| 99 | 25724593 | Bushing |
| 104 | 22707300 | Screw (BID), 2.6ø x 6mm, Tapping |
| 105 | 22707301 | Screw (BID), 2.6ø x 8mm, Tapping |
| 106 | 22707499 | Screw (BID), 2ø x 8mm |
| 107 | 22707366 | Screw (BID), 2.6ø x 6mm |
| 108 | 22703281 | Washer, 2.6ø |
| 109 | 22703280 | E Ring, 4ø |
| 110 | 22703118 | E Ring, 2ø |

## 11. PLAYER MECHANISM EXPLODED VIEW

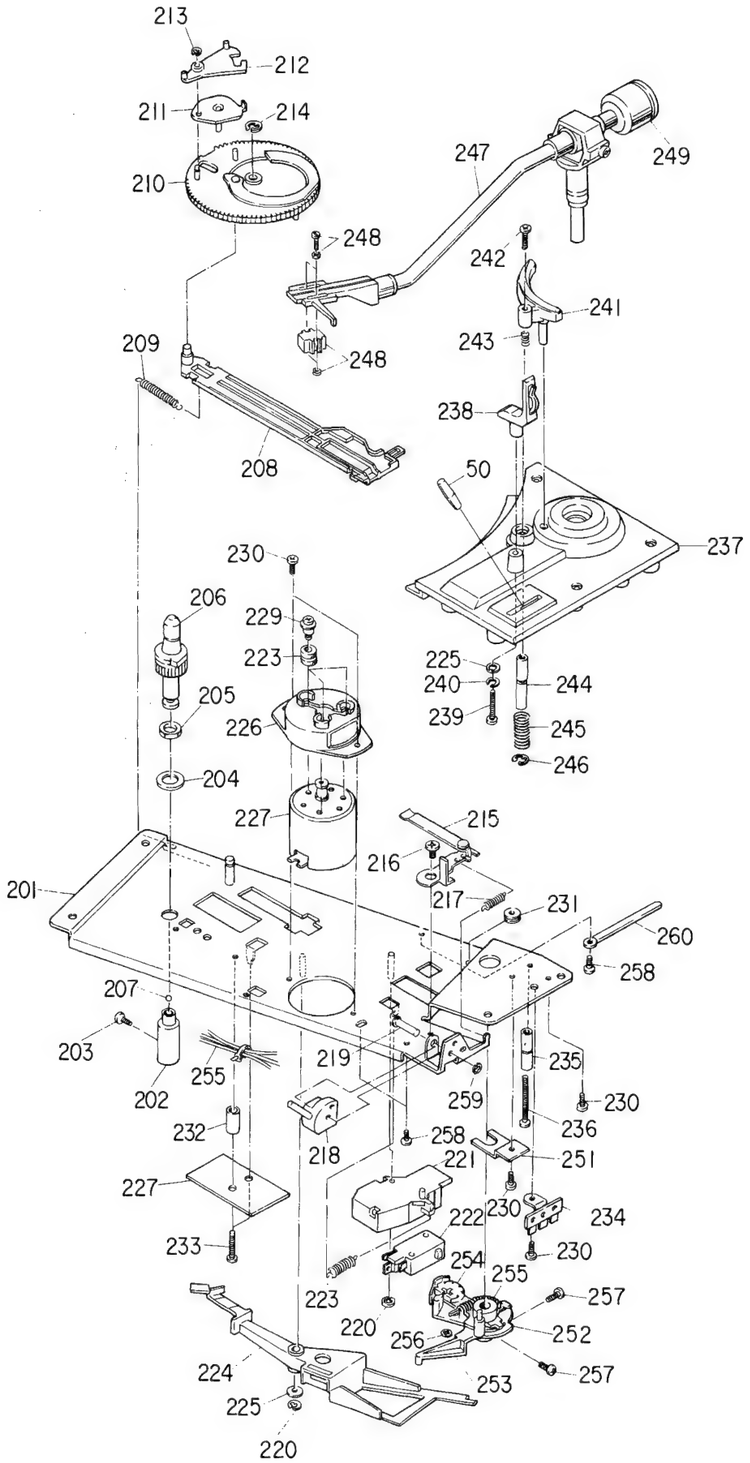



Figure 32.



## 12. CABINET EXPLODED VIEW

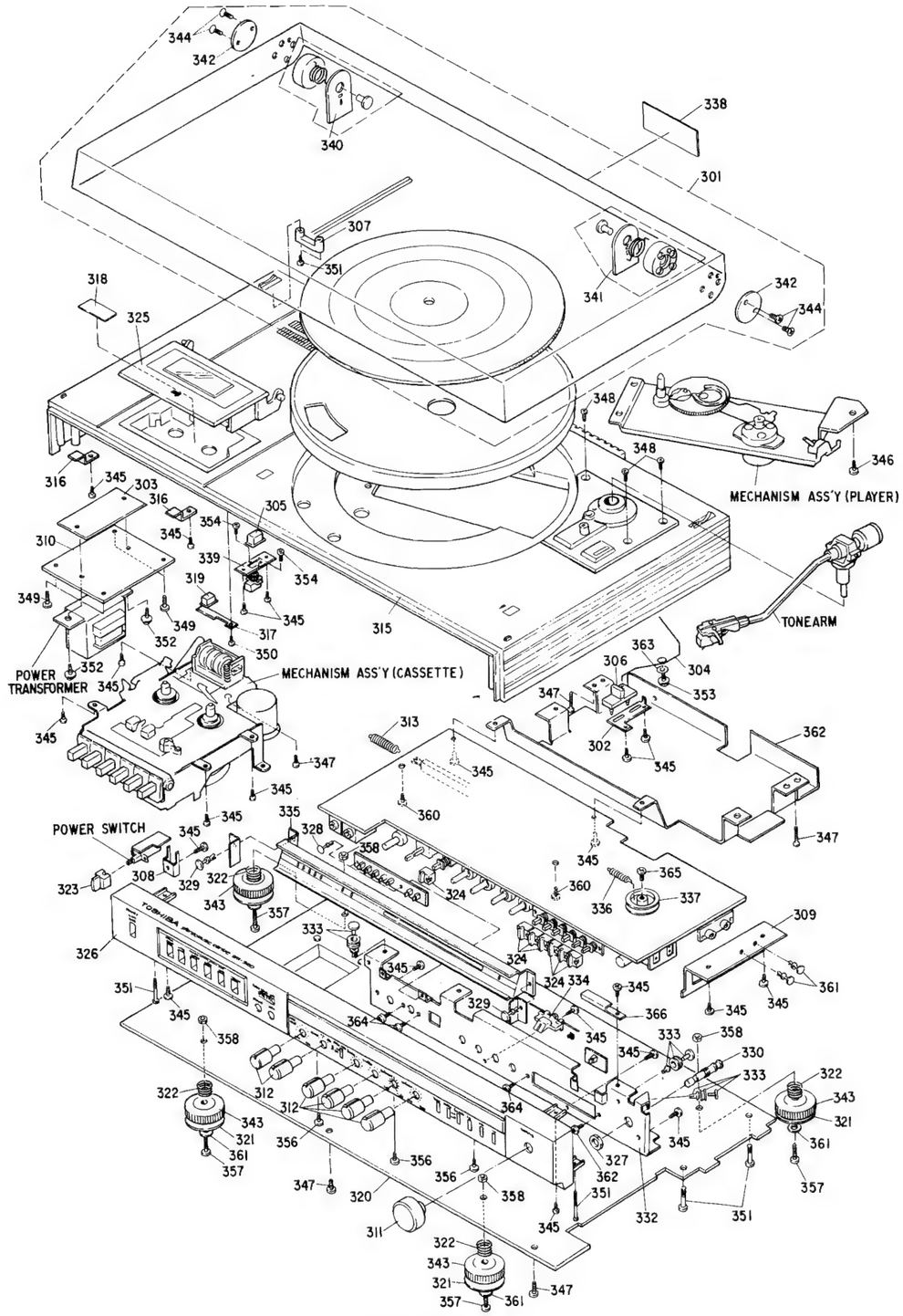



Figure 33.

# 13-2. PARTS LIST

| Symbol No. | Part No. | Description |
|---|---|---|
| | | (PLAYER SECTION) (PU-253) |
| 202 | 20773910 | Bush, Table Shaft |
| 203 | 22707452 | Screw (BID), 3ø x 5mm |
| 204 | 22703142 | Washer, 11.5ø |
| 205 | 22702162 | Nut, 11ø |
| 206 | 20764799 | Shaft Ass'y, Table |
| 207 | 20773077 | Ball, Steel |
| 208 | 20826785 | Operation Plate, Return |
| 209 | 22776670 | Spring |
| 210 | 20727649 | Gear, Main |
| 211 | 20754805 | Trip, Auto |
| 212 | 20754835 | Clutch |
| 213 | 22703117 | E Ring, 1.5ø |
| 214 | 22703279 | E Ring, 3ø |
| 215 | 20754840 | Lever Ass'y, Lift |
| 216 | 22701472 | Screw (FLT), 2.6ø x 13mm |
| 217 | 22776672 | Spring |
| 218 | 20757768 | Cam, Lift |
| 219 | 22746638 | Pin, Lift Cam |
| 220 | 22703118 | E Ring, 2ø |
| 221 | 20743994 | Base, Switch |
| 222 | 22195368 | Switch, Micro (S801) |
| 223 | 22776671 | Spring |
| 224 | 20754782 | Lever, Auto |
| 225 | 22703269 | Washer, 3ø |
| 227 | 22125772 | Motor, DC |
| 228 | 20881180 | Cushion, Motor |
| 229 | 22707283 | Screw, 3ø x 10mm |
| 230 | 22701326 | Screw (BID), 3ø x 8mm, Tapping |
| 232 | 22752859 | Spacer |
| 233 | 22707334 | Screw (BID), 3ø x 14mm |
| 236 | 22701791 | Screw (BID), 3ø x 40mm, TP |
| 237 | 20735718 | Stand, PU |
| 238 | 20731208 | Rest Ass'y, Arm |
| 239 | 22707054 | Screw (BID), 3ø x 20mm, TP |
| 240 | 22703306 | Washer, 3ø, Spring |
| 241 | 20764800 | Bar, Lift |
| 242 | 22701755 | Screw (FLT), 2ø x 10mm, BLK |
| 243 | 22776641 | Spring |
| 244 | 20764798 | Shaft, Lift |
| 245 | 22776677 | Spring |
| 246 | 22703575 | E Ring, 3.1ø |
| 247 | 20731931 | Tonearm |
| 248 | 22155510 | Cartridge (C-291) |
| 249 | 20781737 | Weight |
| 250 | 20871917 | Knob, Lift |
| 252 | 20754828 | Plate, PU Base |
| 253 | 20754827 | Plate, Tonearm |
| 254 | 20757767 | Cam, Adjust |
| 255 | 22772617 | Spring |
| 256 | 20798020 | CS Ring, 4ø |
| 257 | 20795958 | Screw, Special |
| 258 | 22707276 | Screw (BID), 3ø x 12mm, TP |
| 259 | 22703119 | E Ring, 2.5ø |
| 261 | 20723731 | Turntable |
| 262 | 20728025 | Belt, Drive |
| 263 | 20723649 | Sheet, Table |
| | | CABINET PARTS |
| 301 | 20847233 | Cover Ass'y, Dust |
| 305 | 20871354 | Knob, Speed Select |
| 306 | 20871355 | Knob, Cut Off |
| 307 | 22184117 | Clamp, Cord |
| 311 | 22884063 | Knob, Tuning |
| 312 | 22884064 | Knob, Volume/Tone |
| 315 | 22881080 | Cabinet, Top (TE, AY) |
| 315 | 22881042 | Cabinet, Top (TU) |
| 317 | 25779156 | Spring, Counter |
| 318 | 25824436 | Reflector |
| 319 | 25837057 | Button, Counter |
| 320 | 20824072 | Plate Ass'y, Bottom |
| 321 | 20849240 | Sheet, Leg |
| 322 | 25772549 | Spring, Leg |
| 323 | 22824350 | Knob, Power |
| 324 | 22884013 | Knob, Push |
| 325 | 25817953 | Cover Ass'y, Cassette |
| 326 | 20017161 | Panel Ass'y |
| 327 | 22702106 | Nut, 8ø |
| 328 | 22705022 | Rivet, Plastic, 3ø x 5.5mm |
| 329 | 22705021 | Rivet, Plastic, 3ø x 3.5mm |
| 330 | 22743272 | Shaft Ass'y, Tuning |
| 333 | 22742218 | Pulley Ass'y |
| 334 | 22741346 | Pointer Ass'y |
| 335 | 22821589 | Dial Plate Ass'y |
| 336 | 20866009 | Spring, Drum |
| 337 | 22742229 | Drum, Dial |
| 338 | 22864385 | Nameplate (TU, AY) |
| 338 | 22864384 | Nameplate (TE) |
| 340 | 20861105 | Hinge, L |
| 341 | 20861104 | Hinge, R |
| 342 | 20861103 | Cap, Hinge |
| 343 | 20842143 | Insulator |
| 344 | 22707304 | Screw (FLT), 3ø x 8mm, TP |
| 345 | 22701326 | Screw (BID), 3ø x 8mm, TP |
| 346 | 22707165 | Screw (BID), 3ø x 10mm, TP |
| 347 | 22707118 | Screw (BID), 3ø x 12mm, TP |
| 348 | 22707038 | Screw (BID), 3ø x 16mm, TP |
| 349 | 22701438 | Screw (BID), 4ø x 10mm, TP |
| 350 | 22701237 | Screw (BID), 3ø x 6mm, TP |
| 351 | 22707102 | Screw (BID), 3ø x 52mm |
| 352 | 22707698 | Screw (PAN), 4ø x 10mm, BLK |
| 353 | 22707521 | Screw, 3ø x 6mm, BLK |
| 354 | 22707505 | Screw (BID), 2ø x 6mm |
| 356 | 22707165 | Screw (BID), 3ø x 10mm, TP |
| 357 | 22701324 | Screw (BID), 4ø x 12mm |
| 358 | 22702115 | Nut, 4ø |
| 359 | 22703307 | Washer, 6ø |

# 13-3. PARTS LIST

**CAUTION:** The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

| Symbol No. | Part No. | Description |
|---|---|---|
| | | TRANSISTORS, ICS AND DIODES |
| Q001 | | Transistor, 2SK61-GR |
| Q002, 003 | | Transistor, 2SC1923-O |
| Q101 | | Transistor, 2SC1923-O |
| Q102 | | IC, TA7614P |
| Q103, 104 | | Transistor, 2SC2120-Y |
| Q105, 106 | | Transistor, 2SC1815-Y |
| Q201 | | IC, TA7323P-O.Y |
| Q301 | | IC, TA75558S (No.1 ~ 4500) |
| | | IC, TA75458S (No.4501 ~ ) |
| Q401 | | IC, TA75458S |
| Q402, 403 | | Transistor, 2SC1815-Y |
| Q501 | | IC, TA75558S (No.1 ~ 4500) |
| | | IC, TA75458S (No.4501 ~ ) |
| Q502, 503 | | Transistor, 2SC1815-Y |
| Q504, 505 | | IC, TA7629P |
| Q506, 507 | | Transistor, 2SC1815-Y |
| Q508, 509 | | Transistor, 2SC1815-Y |
| Q510, 511 | | Transistor, 2SC1815-Y |
| Q512 | | IC, TA7654P |
| Q513, 514 | | Transistor, 2SK30A-GR-Y |
| Q601, 602 | | Transistor, 2SA970-GR |
| Q603, 604 | | Transistor, 2SA970-GR |
| Q605, 606 | | Transistor, 2SC2120-Y |
| Q607, 608 | | Transistor, 2SC1627A-Y |
| Q609, 610 | | Transistor, 2SA817A-Y |
| Q611, 612 | | Transistor, 2SC790-Y |
| Q613, 614 | | Transistor, 2SA490-Y |
| Q615, 616 | | Transistor, 2SC1815-GR |
| Q901 | | Transistor, 2SD880-Y |
| D001 | | Diode, 1S2236 |
| D201, 202 | | Diode, 1S1555V |
| D203 | | Diode, LED, TLR205 |
| D501 | | Diode, LED, TLR205 |
| D502 | | Diode, LED, TLG205 |
| D504 | | Diode, 1S1555V |
| D505 | | Diode, 1S1555V |
| D507, 508 | | Diode, 1S1555V |
| D601, 602 | 22115560 | Diode, KB362-S |
| D603, 604 | | Varistor, M8513A-R |
| D605, 606 | | Diode, Zener, 05Z12 |
| D607, 608 | | Diode, 1S1555V |
| D609 | | Diode, 1S1555V |
| D701, 702 | | Diode, LED, TLG205 |
| D703 | | Diode, LED, TLG205 |
| D704, 705 | | Diode, LED, TLR205 |
| ⚠ D901 | 22115422 | Diode, S4VB20 |
| ⚠ D902 | 22115485 | Diode, WL02M |
| D903, 904 | | Diode, Zener, 05Z12 |
| D905 | | Diode, Zener, 05Z12 |

| Symbol No. | Part No. | Description |
|---|---|---|
| | | ELECTRICAL PARTS |
| Z001 | 22135035 | Filter, Band Pass |
| Z101, 102 | 22153140 | Filter, Ceramic |
| Z201, 202 | 22153078 | Filter, Band Pass |
| Z501 | 22132530 | Coil, Bias Oscillator |
| T001 | 22294412 | Coil, RF, FM |
| T002 | 22265764 | IF Transformer, FM |
| T003 | 22291082 | Coil, Choke, 2.2μH |
| T004 | 22295117 | Coil, Oscillator, FM |
| T005 | 22230106 | Coil, 470μH |
| T101 | 22242833 | Coil, Antenna |
| T102 | 22205063 | Coil |
| T103 | 22245322 | Coil, Oscillator, MW |
| T104 | 22266359 | Filter, Band Pass, 460 kHz |
| T105 | 22230106 | Coil, 470μH |
| T106 | 22267350 | IF Transformer |
| T107 | 22232219 | Coil, 8.85mH |
| L501, 502 | 22153157 | Filter, Dolby (19) |
| L503, 504 | 22153158 | Filter, Dolby (85) |
| L505, 506 | 22232203 | Coil, 22mH |
| L507, 508 | 22232207 | Coil, 2.2mH |
| T901 | 22295107 | Coil, 800μH |
| ⚠ T902 | 22223890 | Transformer, Power (TU, AY) |
| ⚠ T902 | 22223889 | Transformer, Power (TE) |
| S101 | 22195682 | Switch, Push |
| S501 | 22195681 | Switch, Slide, Record/ Playback |
| S502 | 22195697 | Switch, Rotary, Tape |
| S503 | 22195612 | Switch, Push, Dolby |
| S504 | 22195699 | Switch, Slide, Beat |
| S505 | 22195465 | Switch, Leaf, Cassette Mut. |
| S801 | 22195368 | Switch, Micro, Player Motor |
| S802 | 22195717 | Switch, Push, Speed Select |
| ⚠ S901 | 22195631 | Switch, Push, Power |
| S902 | 22195555 | Switch, Leaf, Cassette |
| J001 | 22163835 | Jack, Antenna |
| J501 | 22163840 | Jack, Microphone |
| J601 | 22163836 | Jack, Headphone |
| J602 | 22163692 | Jack, US 2P |
| ⚠ F601, 602 | 22144330 | Fuse, 2.5A/250V |
| ⚠ F901 | 22144432 | T 630mA/250V |
| N101 | 22113499 | Lamp, Tuning |
| N102 | 22113498 | Lamp, Power |
| ⚠ EP01 | 22176536 | Cord, Power (TU) |
| ⚠ EP01 | 22176588 | Cord, Power (AY) |
| ⚠ EP01 | 22176286 | Cord, Power (TE) |

| Symbol No. | Part No. | Description |
|---|---|---|
| | | **CAPACITORS** |
| | | **D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%, Z = –20+80%** |
| | | **ABBREVIATIONS: CD = Ceramic Disk,** |
| | | **EL = Electrolytic,** |
| | | **PP = Polypropylene, MY = Mylar** |
| | | **BL = Barrier Layer, PS = Polystrene** |
| C001 | 22342223 | CD, 0.022mfd, 50V, Z |
| C002 | 22343102 | CD, 1000pF, 50V, M |
| C004 | 22362180 | CD, 18pF, 50V, K |
| C005 | 22361309 | CD, 3pF, 50V, D |
| C006 | 22362101 | CD, 100pF, 50V, K |
| C007, 008 | 22342223 | CD, 0.022mfd, 50V, Z |
| C010 | 22360140 | CD, 18pF, 50V, J |
| C011 | 22361809 | CD, 8pF, 50V, D |
| C012 | 22360132 | CD, 15pF, 50V, J |
| C013 | 22361508 | CD, 0.5pF, 50V, D |
| C014 | 22360137 | CD, 39pF, 50V, J |
| C015 | 22360310 | CD, 10pF, 50V, J |
| C016, 017 | 22342223 | CD, 0.022mfd, 50V, Z |
| C018 | 22342223 | CD, 0.022mfd, 50V, Z |
| C019 | 22485101 | EL, 100mfd, 16V |
| VC1 | 22307362 | Variable Capacitor (With C003, 009) |
| C101 | 22342103 | CD, 0.01mfd, 50V, Z |
| C102, 103 | 22342223 | CD, 0.022mfd, 50V, Z |
| C104 | 22485100 | EL, 10mfd, 16V |
| C105 | 22342223 | CD, 0.022mfd, 50V, Z |
| C106, 107 | 22342473 | CD, 0.047mfd, 50V, Z |
| C108 | 22342223 | CD, 0.022mfd, 50V, Z |
| C109 | 22362151 | CD, 150pF, 50V, K |
| C110 | 22360333 | BL, 0.1mfd, 25V, M |
| C111 | 22483101 | EL, 100mfd, 10V |
| C112 | 22483470 | EL, 47mfd, 10V |
| C113 | 22485100 | EL, 10mfd, 16V |
| C114 | 22309155 | Trimmer, 20pF |
| C115 | 22362180 | CD, 18pF, 50V, K |
| C116 | 22342103 | CD, 0.01mfd, 50V, Z |
| C117 | 22309155 | Trimmer, 20pF |
| C118 | 22321083 | PP, 150pF, 50V, J |
| C119 | 22321049 | PP, 330pF, 50V, J |
| C120 | 22362470 | CD, 47pF, 50V, K |
| C121 | 22360310 | CD, 10pF, 50V, J |
| C122 | 22342223 | CD, 0.022mfd, 50V, Z |
| C123 | 22362391 | CD, 390pF, 50V, K |
| C124 | 22342473 | CD, 0.047mfd, 50V, Z |
| C125 | 22485101 | EL, 100mfd, 16V |
| C126 | 22488479 | EL, 4.7mfd, 50V |
| C127 | 22488339 | EL, 3.3mfd, 50V |
| C128 | 22349221 | CD, 220pF, 50V, K |
| C129 | 22362331 | CD, 330pF, 50V, K |
| C130 | 22342473 | CD, 0.047mfd, 50V, Z |
| C131 | 22488339 | EL, 3.3mfd, 50V |
| C201 | 22478478 | EL (BP), 0.47mfd, 50V |

| Symbol No. | Part No. | Description |
|---|---|---|
| C202 | 22488228 | EL, 0.22mfd, 50V |
| C203 | 22488478 | EL, 0.47mfd, 50V |
| C204 | 22321057 | PP, 1000pF, 50V, M |
| C205 | 22488479 | EL, 4.7mfd, 50V |
| C206, 207 | 22488339 | EL, 3.3mfd, 50V |
| C208 | 22485470 | EL, 47mfd, 16V |
| C209, 210 | 22372682 | MY, 6800pF, 50V, K |
| C301, 302 | 22372183 | MY, 0.018mfd, 50V, K |
| C303, 304 | 22349471 | CD, 470pF, 50V, K |
| C305, 306 | 22372472 | MY, 4700pF, 50V, K |
| C307, 308 | 22362101 | CD, 100pF, 50V, K |
| C309, 310 | 22487100 | EL, 10mfd, 35V |
| C401, 402 | 22488339 | EL, 3.3mfd, 50V |
| C403, 404 | 22349471 | CD, 470pF, 50V, K |
| C405, 406 | 22488339 | EL, 3.3mfd, 50V |
| C407, 408 | 22372682 | MY, 6800pF, 50V, K |
| C409, 410 | 22372393 | MY, 0.039mfd, 50V, K |
| C411, 412 | 22371333 | MY, 0.033mfd, 50V, J |
| C413, 414 | 22372224 | MY, 0.22mfd, 50V, K |
| C415, 416 | 22488339 | EL, 3.3mfd, 50V |
| C417 | 22488228 | EL, 0.22mfd, 50V |
| C501, 502 | 22343102 | CD, 1000pF, 50V, M |
| C503, 504 | 22488339 | EL, 3.3mfd, 50V |
| C505, 506 | 22372562 | MY, 5600pF, 50V, K |
| C507, 508 | 22488339 | EL, 3.3mfd, 50V |
| C509, 510 | 22362101 | CD, 100pF, 50V, K |
| C511, 512 | 22362101 | CD, 100pF, 50V, K |
| C513, 514 | 22485470 | EL, 47mfd, 16V |
| C515, 516 | 22488478 | EL, 0.47mfd, 50V |
| C517, 518 | 22485100 | EL, 10mfd, 16V |
| C519, 520 | 22488338 | EL, 0.33mfd, 50V |
| C521, 522 | 22488108 | EL, 0.1mfd, 50V |
| C523, 524 | 22485100 | EL, 10mfd, 16V |
| C525, 526 | 22371473 | MY, 0.047mfd, 50V, J |
| C527, 528 | 22371472 | MY, 4700pF, 50V, J |
| C529, 530 | 22371273 | MY, 0.027mfd, 50V, J |
| C531, 532 | 22371562 | MY, 5600pF, 50V, J |
| C533, 534 | 22485100 | EL, 10mfd, 16V |
| C535, 536 | 22485100 | EL, 10mfd, 16V |
| C537, 538 | 22362121 | CD, 120pF, 50V, K |
| C539, 540 | 22371222 | MY, 2200pF, 50V, J |
| C541, 542 | 22488339 | EL, 3.3mfd, 50V |
| C543, 544 | 22488339 | EL, 3.3mfd, 50V |
| C545, 546 | 22478109 | EL, 1mfd, 50V |
| C547, 548 | 22362221 | CD, 220pF, 50V, K |
| C549, 550 | 22371333 | MY, 0.033mfd, 50V, J |
| C551, 554 | 22371123 | MY, 0.012mfd, 50V, J |
| C555, 556 | 22488109 | EL, 1mfd, 50V |
| C557, 558 | 22488339 | EL, 3.3mfd, 50V |
| C559 | 22488228 | EL, 0.22mfd, 50V |
| C560 | 22380121 | PS, 820pF, 200V, K |
| C561 | 22380101 | PS, 3900pF, 200V, K |
| C562 | 22485470 | EL, 47mfd, 16V |
| C563 | 22342223 | CD, 0.022mfd, 50V, Z |

| Symbol No. | Part No. | Description |
|---|---|---|
| C564, 565 | 22372332 | MY, 3300pF, 50V, K |
| C566, 567 | 22485220 | EL, 22mfd, 16V |
| C568, 569 | 22488339 | EL, 3.3mfd, 50V |
| C570, 571 | 22485101 | EL, 100mfd, 16V |
| C572 | 22485101 | EL, 100mfd, 16V |
| C601, 602 | 22488479 | EL, 4.7mfd, 50V |
| C603, 604 | 22488101 | EL, 100mfd, 16V |
| C605, 606 | 22488470 | EL, 47mfd, 50V |
| C607, 608 | 22362330 | CD, 33pF, 50V, K |
| C609, 610 | 22372104 | MY, 0.1mfd, 50V, K |
| C611, 612 | 22362101 | CD, 100pF, 50V, K |
| C613 | 22488100 | EL, 10mfd, 50V |
| C614 | 22488100 | EL, 10mfd, 50V |
| C615 | 22488100 | EL, 10mfd, 50V |
| C701, 702 | 22488108 | EL, 0.1mfd, 50V |
| C703, 704 | 22349332 | CD, 3300pF, 50V, K |
| C705 | 22488109 | EL, 1mfd, 50V |
| C706 | 22488479 | EL, 4.7mfd, 50V |
| C707 | 22485221 | EL, 220mfd, 16V |
| ⚠ C901 | 22340150 | CD, 4700pF, 400V, M |
| C902, 903 | 22440407 | EL, 3300mfd, 25V |
| C904, 905 | 22485221 | EL, 220mfd, 16V |
| ⚠ C906 | 22440422 | EL, 2200mfd, 25V |
| C907 | 22485470 | EL, 47mfd, 16V |
| C908 | 22485470 | EL, 47mfd, 16V |
| C909 | 22485221 | EL, 220mfd, 16V |
| ⚠ C910 | 22340148 | CD, 0.01mfd x 2, 500V |
| C911 | 22342223 | CD, 0.022mfd, 50V, Z |
| C914 | 22485221 | EL, 220mfd, 16V |

**RESISTORS**

**Resistors are carbon film ¼W, ±5% unless otherwise noted. K = 1000**

**PRC is short for the printed resistor circuit. If replacement of the resistor in PRC is required, please use the substitutional fixed carbon film resistor of ¼W, ±5% according to the following list.**

| | | |
|---|---|---|
| R001 | 22555101 | 100 ohm |
| R002 | 22555682 | 6.8K ohm |
| R003 | 22555101 | 100 ohm |
| R004 | 22555332 | 3.3K ohm |
| R005 | 22555332 | 3.3K ohm |
| R006 | 22555103 | 10K ohm |
| R007 | 22545101 | 100 ohm |
| R008 | 22555103 | 10K ohm |
| R009 | 22555332 | 3.3K ohm |
| R010 | 22555104 | 100K ohm |
| R101 | 22555473 | 47K ohm |
| R102 | 22555103 | 10K ohm |
| R103 | 22555102 | 1K ohm |
| R104 | 22555101 | 100 ohm |
| R105 | 22555332 | 3.3K ohm |

| Symbol No. | Part No. | Description |
|---|---|---|
| R106 | 22545221 | 220 ohm |
| R107 | 22555569 | 5.6 ohm |
| R108 | 22555272 | 2.7K ohm |
| R109 | 22555101 | 100 ohm |
| R201 | 22555104 | 100K ohm |
| R202 | 22658498 | 10K ohm, Semi-fixed |
| R401 | 22651541 | 100K ohm, Variable, Volume |
| R402 | 22628025 | 250K ohm, Variable, Balance |
| R403, 404 | 22651542 | 100K ohm, Variable, Tone |
| R501 | 22651540 | 50K ohm, Variable |
| R502, 503 | 22658496 | 200K ohm, Semi-fixed |
| R504 | 22570267 | 270 ohm, 1W, Oxide Metal Film |
| R505 | 22570308 | 120 ohm, 2W, Oxide Metal Film |
| ⚠ R506 | 22500118 | 27 ohm, Fusible |
| R507, 508 | 22555183 | 18K ohm |
| R509, 530 | 22658494 | 50K ohm, Semi-fixed |
| R510 | 22555221 | 220 ohm |
| R511, 512 | 22545473 | 47K ohm |
| R513, 514 | 22555332 | 3.3K ohm |
| R515 | 22555123 | 12K ohm |
| R516 | 22555221 | 220 ohm |
| R517, 518 | 22555103 | 10K ohm |
| R519, 520 | 22658567 | 10K ohm, Semi-fixed |
| R521, 523 | 22658494 | 50K ohm, Semi-fixed |
| R522 | 22555154 | 150K ohm |
| R524, 525 | 22658494 | 50K ohm, Semi-fixed |
| R529 | 22555332 | 3.3K ohm |
| R531, 532 | 22555101 | 100 ohm |
| R533, 534 | 22555223 | 22K ohm |
| R601, 602 | 22555183 | 18K ohm |
| R603, 604 | 22555473 | 47K ohm |
| R605, 606 | 22555102 | 1K ohm |
| R607, 608 | 22555332 | 3.3K ohm |
| ⚠ R609, 610 | 22500136 | 270 ohm, Fusible |
| ⚠ R611, 612 | 22500136 | 270 ohm, Fusible |
| R613, 614 | 22500260 | 0.22 ohm, 3W (Pair) |
| R615, 616 | 22658500 | 300 ohm, Semi-fixed |
| R617, 618 | 22570250 | 10 ohm, 1W, Metal Film |
| R619, 620 | 22570266 | 220 ohm, 1W, Metal Film |
| R621 | 22555683 | 68K ohm |
| R622 | 22555471 | 470 ohm |
| R623 | 22555224 | 220K ohm |
| R624 | 22555101 | 100 ohm |
| R625 | 22555823 | 82K ohm |
| R626 | 22555104 | 100K ohm |
| R627 | 22555682 | 6.8K ohm |
| R628 | 22555103 | 10K ohm |
| ⚠ R901, 902 | 22500219 | 82 ohm, Fusible |
| ⚠ R903 | 22500202 | 2.2 ohm, ½W, Fusible |
| ⚠ R904 | 22500130 | 10 ohm, Fusible |
| PR1 | 22555101 | 100 ohm (PRC) |

| Symbol No. | Part No. | Description |
|---|---|---|
| PR2 | 22555101 | 100 ohm (PRC) |
| PR3 | 22555154 | 150K ohm (PRC) |
| PR4 | 22555182 | 1.8K ohm (PRC) |
| PR5 | 22555182 | 1.8K ohm (PRC) |
| PR6 | 22555223 | 22K ohm (PRC) |
| PR7 | 22555331 | 330 ohm (PRC) |
| PR8 | 22555102 | 1K ohm (PRC) |
| PR9 | 22555102 | 1K ohm (PRC) |
| PR10 | 22555101 | 100 ohm (PRC) |
| PR11 | 22555151 | 150 ohm (PRC) |
| PR12 | 22555103 | 10K ohm (PRC) |
| PR13 | 22555472 | 4.7K ohm (PRC) |
| PR14 | 22555104 | 100K ohm (PRC) |
| PR15 | 22555822 | 8.2K ohm (PRC) |
| PR16, 17 | 22555562 | 5.6K ohm (PRC) |
| PR18, 19 | 22555183 | 18K ohm (PRC) |
| PR20 | 22555332 | 3.3K ohm (PRC) |
| PR21 | 22555183 | 18K ohm (PRC) |
| PR22 | 22555153 | 15K ohm (PRC) |
| PR23 | 22555102 | 1K ohm (PRC) |
| PR24 | 22555472 | 4.7K ohm (PRC) |
| PR25, 26 | 22555103 | 10K ohm (PRC) |
| PR27, 28 | 22555683 | 68K ohm (PRC) |
| PR29, 38 | 22555561 | 560 ohm (PRC) |
| PR30, 37 | 22555471 | 470 ohm (PRC) |
| PR31, 32 | 22555182 | 1.8K ohm (PRC) |
| PR33, 36 | 22555473 | 47K ohm (PRC) |
| PR34, 35 | 22555102 | 1K ohm (PRC) |
| PR39 | 22555470 | 47 ohm (PRC) |
| PR40 | 22555561 | 560 ohm (PRC) |
| PR41 | 22555561 | 560 ohm (PRC) |
| PR42, 44 | 22555563 | 56K ohm (PRC) |
| PR43 | 22555474 | 470K ohm (PRC) |
| PR45, 46 | 22555222 | 2.2K ohm (PRC) |
| PR47, 48 | 22555184 | 180K ohm (PRC) |
| PR49, 50 | 22555153 | 15K ohm (PRC) |
| PR51, 52 | 22555152 | 1.5K ohm (PRC) |
| PR53, 56 | 22555473 | 47K ohm (PRC) |
| PR54, 55 | 22555473 | 47K ohm (PRC) |
| PR57, 58 | 22555563 | 56K ohm (PRC) |
| PR59, 60 | 22555152 | 1.5K ohm (PRC) |
| PR61, 62 | 22555222 | 2.2K ohm (PRC) |
| PR63, 64 | 22555472 | 4.7K ohm (PRC) |
| PR65, 66 | 22555101 | 100 ohm (PRC) |
| PR67, 68 | 22555182 | 1.8K ohm (PRC) |
| PR69, 72 | 22555272 | 2.7K ohm (PRC) |
| PR71, 73 | 22555123 | 12K ohm (PRC) |
| PR74 | 22555122 | 1.2K ohm (PRC) |
| PR75, 81 | 22555563 | 56K ohm (PRC) |
| PR76, 82 | 22555182 | 1.8K ohm (PRC) |
| PR77, 83 | 22555331 | 330 ohm (PRC) |
| PR78, 84 | 22555123 | 12K ohm (PRC) |
| PR79, 85 | 22555473 | 47K ohm (PRC) |

| Symbol No. | Part No. | Description |
|---|---|---|
| PR80, 95 | 22555473 | 47K ohm (PRC) |
| PR86, 87 | 22555473 | 47K ohm (PRC) |
| PR88, 99 | 22555274 | 270K ohm (PRC) |
| PR90, 94 | 22555181 | 180 ohm (PRC) |
| PR91, 93 | 22555221 | 220 ohm (PRC) |
| PR92, 101 | 22555104 | 100K ohm (PRC) |
| PR98 | 22555154 | 150K ohm (PRC) |
| PR100 | 22555102 | 1K ohm (PRC) |
| PR102, 127 | 22555102 | 1K ohm (PRC) |
| PR103 | 22555473 | 47K ohm (PRC) |
| PR104, 107 | 22555393 | 39K ohm (PRC) |
| PR105, 108 | 22555474 | 470K ohm (PRC) |
| PR106, 110 | 22555183 | 18K ohm (PRC) |
| PR109, 125 | 22555331 | 330 ohm (PRC) |
| PR111, 112 | 22555563 | 56K ohm (PRC) |
| PR113 | 22555222 | 2.2K ohm (PRC) |
| PR114, 115 | 22555102 | 1K ohm (PRC) |
| PR116 | 22555102 | 1K ohm (PRC) |
| PR117 | 22555182 | 1.8K ohm (PRC) |
| PR118 | 22555122 | 1.2K ohm (PRC) |
| PR119, 120 | 22555332 | 3.3K ohm (PRC) |
| PR121 | 22555104 | 100K ohm (PRC) |
| PR122 | 22555103 | 10K ohm (PRC) |
| PR123 | 22555102 | 1K ohm (PRC) |
| PR124 | 22555683 | 68K ohm (PRC) |
| PR126 | 22555122 | 1.2K ohm (PRC) |
| PR127 | 22555102 | 1K ohm (PRC) |
| PR128 | 22555222 | 2.2K ohm (PRC) |
| PR129 | 22555102 | 1K ohm (PRC) |
| PR131 | 22555682 | 6.8K ohm (PRC) |

**ACCESSORIES**

| | | |
|---|---|---|
| | 20971046 | Adaptor, 45r.p.m. |
| | 22124703 | Antenna, Feeder |
| | 22124486 | Wire, DIN |
| | 22170433 | Cord, Speaker (AY) |
| | 22902836 | Owner's Manual |
| | 22154213 | Microphone (TU) |

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PRINTED IN JAPAN 22905053 Sep., 1981 Ⓑ